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Backup Alarms

Backup Alarms

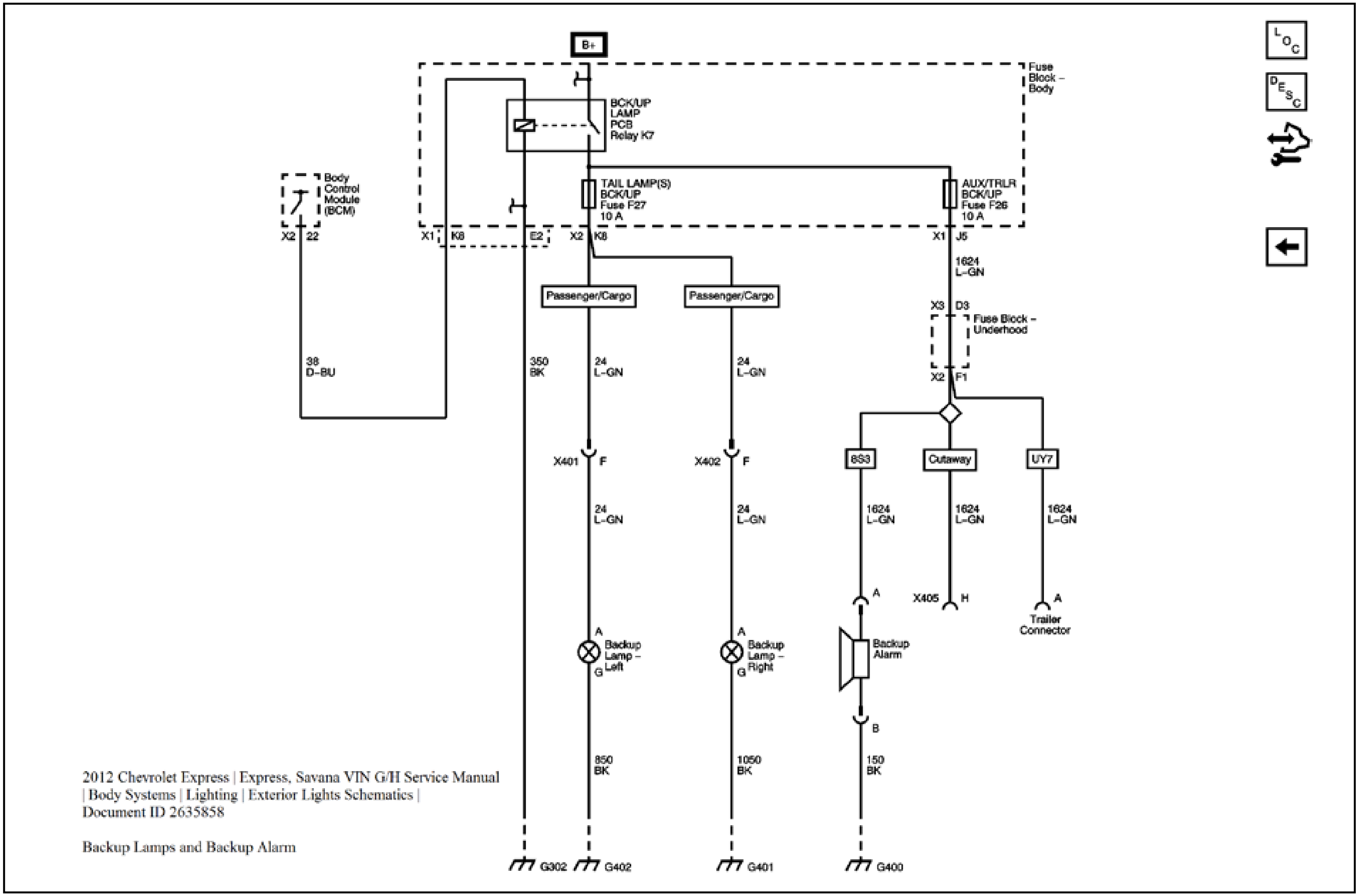
For installation of backup alarms on units with out option code 8S3 [factory backup alarm - loose shipped] connection can be made at the rear lighting connector X-405-H Light Green 1624 wire. [For 8S3 see schematic on next page.]

If the backup lamps illuminate in peremeter lighting and key fob acknowledgement modes there are two solutions for correct operation of the backup alarm:

1. Return the unit to a GM dealer to have the BCM software for option 8S3 loaded. This is a fee for service activity.
2. Install an ignition controlled relay to connect the alarm to the 1624 wire such that the relay is closed [alarm connected] with key on. See simplified schematic.

(continued on next page)

Backup Alarms (cont'd.)


B+
Fuse Block – Body
BCK/UP LAMP PCB Relay K7
Body Control Module (BCM)
TAIL LAMP(S) BCK/UP Fuse F27 10 A
AUX/TRLR BCK/UP Fuse F26 10 A
X2 22
X1 K8
E2
X2 K8
X1 J5
1624 L-GN
Passenger/Cargo
Passenger/Cargo
X3 D3
Fuse Block – Underhood
X2 F1
38 D-BU
350 BK
24 L-GN
24 L-GN
X401 F
X402 F
8S3
Cutaway
UY7
24 L-GN
24 L-GN
1624 L-GN
1624 L-GN
1624 L-GN
A
X405 H
A
Trailer Connector
A
Backup Lamp – Left
G
A
Backup Lamp – Right
G
Backup Alarm
B
850 BK
1050 BK
150 BK
G302
G402
G401
G400

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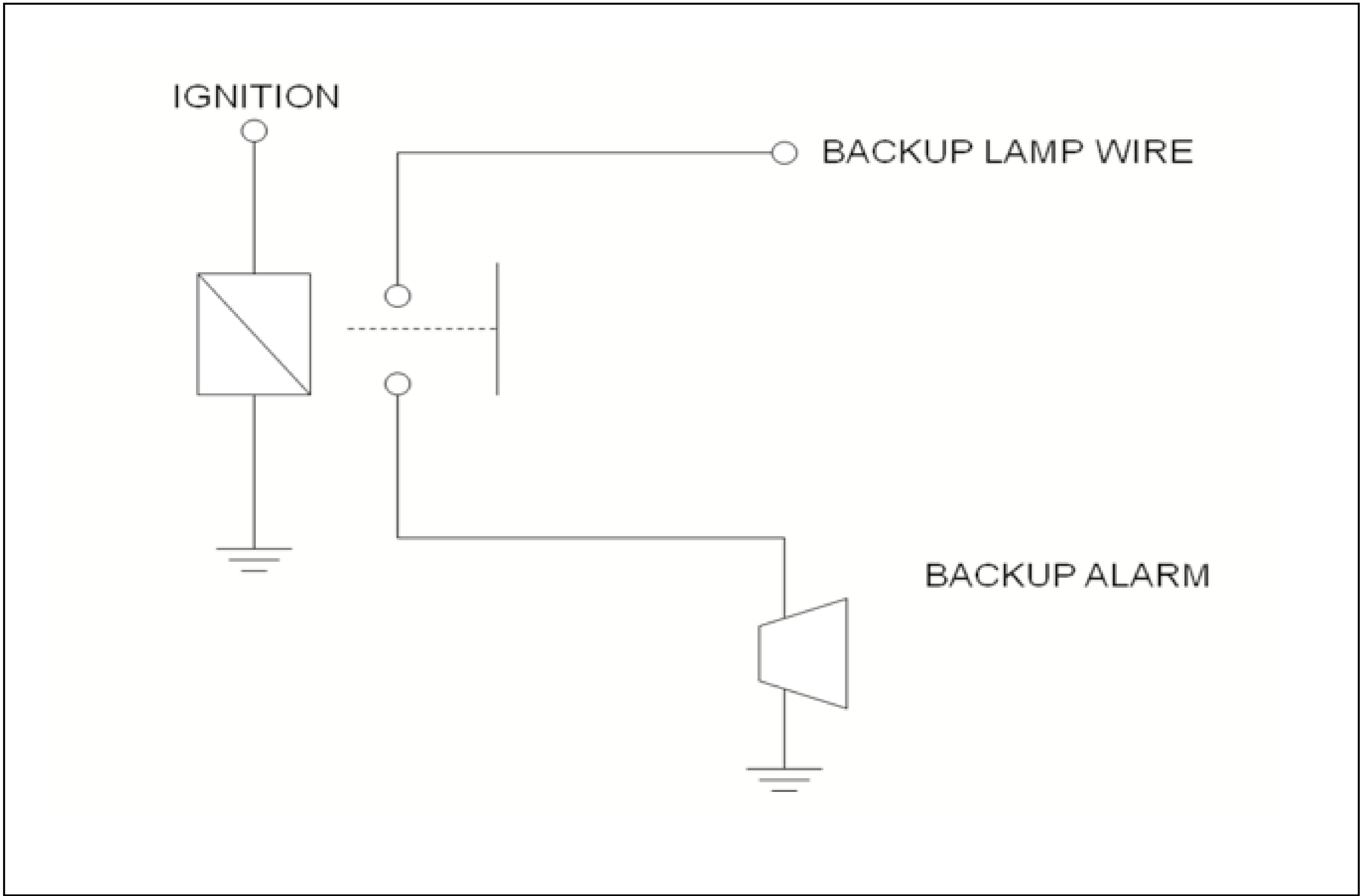
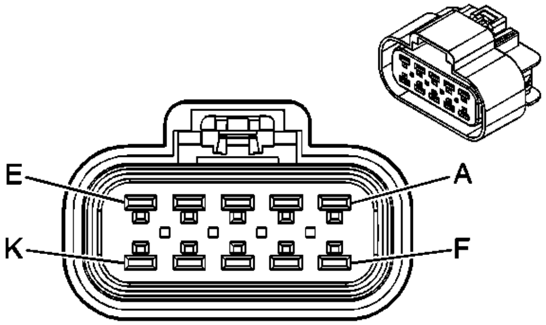
Backup Lamps and Backup Alarm

Ignition Controlled Backup Alarm Relay


IGNITION
BACKUP LAMP WIRE
BACKUP ALARM

X405 Cutaway Rear Lighting Connector to Chassis Harness (Cutaway)

Connector Part Information



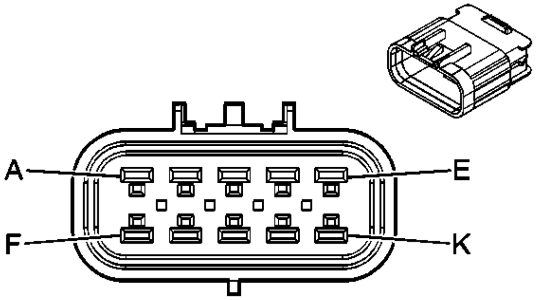
Harness Type: Cutaway Rear Lighting Connector
OEM Connector: 15326660
Service Connector: 88986262
Description: 10-Way F GT 280 5.8 Series, Sealed (BK)

Terminal Part Information

Terminated Lead: 13575405
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304719/19
Core/Insulation Crimp: 2/5

(continued on next page)

Connector Part Information



Harness Type: Chassis
OEM Connector: 15326661
Service Connector: 88986245
Description: 10-Way M GT 280 5.8 Series, Sealed (BK)

Terminal Part Information

Terminated Lead: 13327135
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: 15304731/19
Core/Insulation Crimp: Pins: C-H - 2/5
Core/Insulation Crimp: Pin K - C/5

(continued on next page)

X405 Cutaway Rear Lighting Connector to Chassis Harness (Cutaway) cont'd

Harness: Cutaway Rear Lighting Connector, *cont'd.*

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 WH	17	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

Harness: Chassis, *cont'd.*

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 L-BU	1320	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

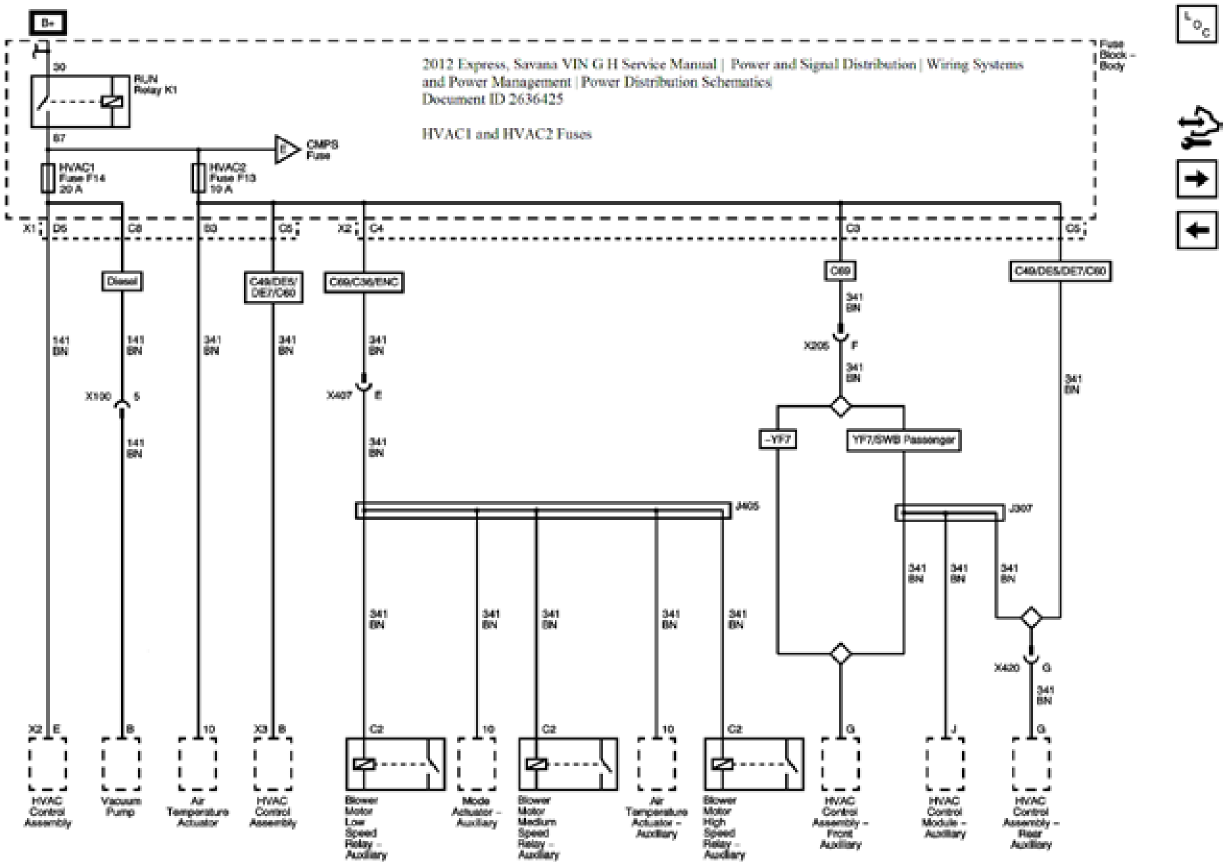
In Cab Ignition Control Signal

An ignition switched control signal can be accessed at several locations. Example:

1. Body Fuse Block HVAC1 F14 20A or X1-D5
2. For Units with power windows [A31] Driver Door Harness Connector X500 D6

This signal can be used to close a control relay to power your application with a fused power feed to battery +.

Battery power can be obtained from the main power feed at the side of the body fuse block under the driver seat.


B+
30
RUN Relay K1
87
CMPS Fuse
HVAC1 Fuse F14 20 A
HVAC2 Fuse F13 10 A
2012 Express, Savana VIN G H Service Manual | Power and Signal Distribution | Wiring Systems and Power Management | Power Distribution Schematics
Document ID 2636425
HVAC1 and HVAC2 Fuses
Fuse Block - Body
X1 D5
C8
B3
C5
X2 C4
C3
C5
Diesel
C49/DE5/DE7/C60
C69/C36/ENC
C69
C49/DE5/DE7/C60
141 BN
341 BN
X100 5
X407 E
X205 F
–YF7
YF7/SWB Passenger
J405
J307
X420 G
X2 E
B
10
X3 B
C2
10
J
G
HVAC Control Assembly
Vacuum Pump
Air Temperature Actuator
HVAC Control Assembly
Blower Motor Low Speed Relay - Auxiliary
Mode Actuator - Auxiliary
Blower Motor Medium Speed Relay - Auxiliary
Air Temperature Actuator - Auxiliary
Blower Motor High Speed Relay - Auxiliary
HVAC Control Assembly - Front Auxiliary
HVAC Control Module - Auxiliary
HVAC Control Assembly - Rear Auxiliary
LOC

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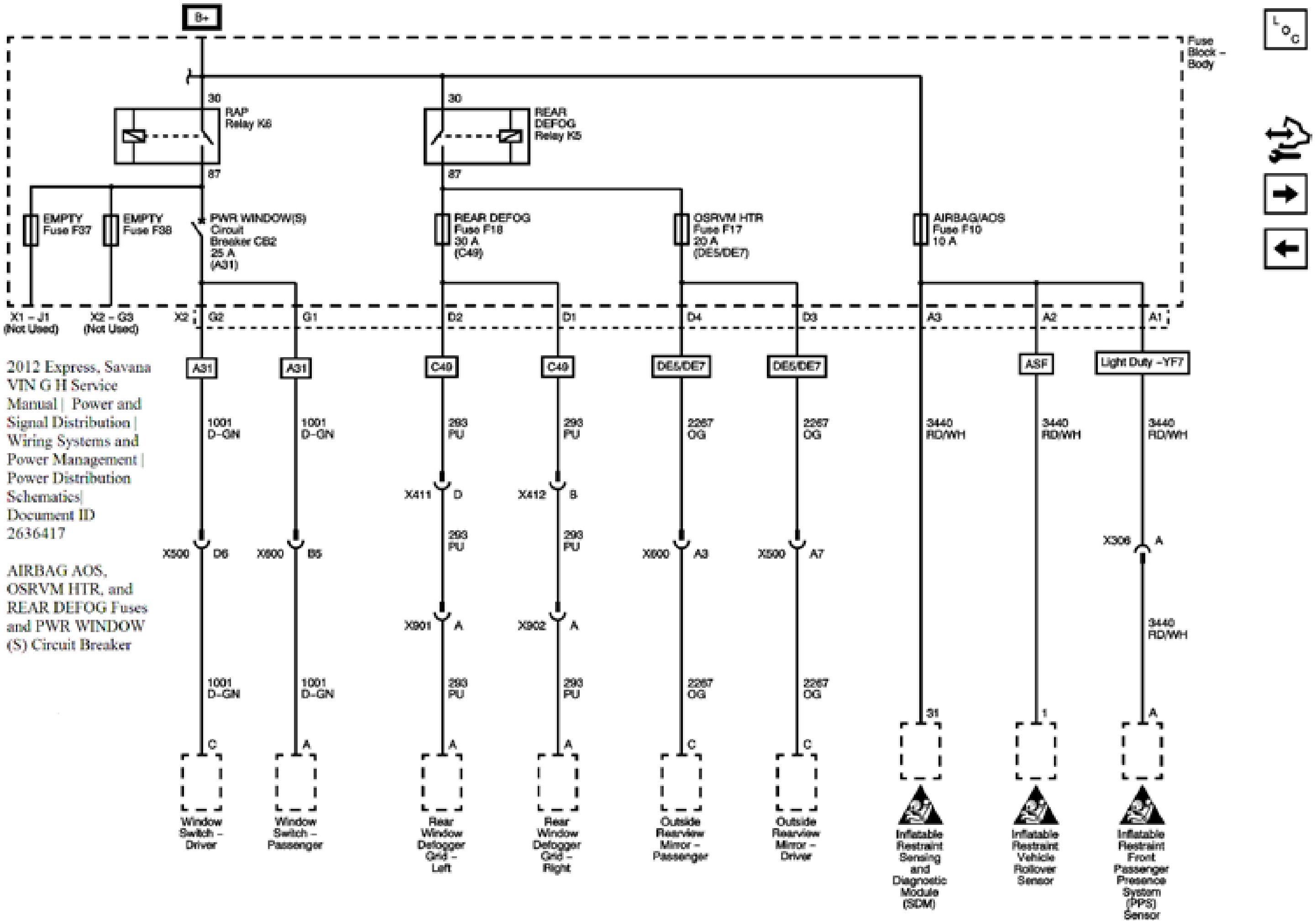
B+
Fuse Block – Body
L O C
30
RAP Relay K8
87
30
REAR DEFOG Relay K5
87
EMPTY Fuse F37
EMPTY Fuse F38
PWR WINDOW(S) Circuit Breaker CB2 25 A (A31)
REAR DEFOG Fuse F18 30 A (C49)
OSRVM HTR Fuse F17 20 A (DE5/DE7)
AIRBAG/AOS Fuse F10 10 A
X1 – J1 (Not Used)
X2 – G3 (Not Used)
X2
G2
G1
D2
D1
D4
D3
A3
A2
A1
A31
A31
C49
C49
DE5/DE7
DE5/DE7
ASF
Light Duty –YF7
1001 D–GN
1001 D–GN
293 PU
293 PU
2267 OG
2267 OG
3440 RD/WH
3440 RD/WH
3440 RD/WH
X411 D
X412 B
X500 D6
X800 B5
X800 A3
X500 A7
X306 A
X901 A
X902 A
3440 RD/WH
1001 D–GN
1001 D–GN
293 PU
293 PU
2267 OG
2267 OG
31
1
A
C
A
A
A
C
C
Window Switch – Driver
Window Switch – Passenger
Rear Window Defogger Grid – Left
Rear Window Defogger Grid – Right
Outside Rearview Mirror – Passenger
Outside Rearview Mirror – Driver
Inflatable Restraint Sensing and Diagnostic Module (SDM)
Inflatable Restraint Vehicle Rollover Sensor
Inflatable Restraint Front Passenger Presence System (PPS) Sensor

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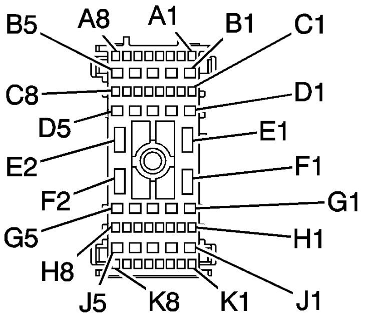
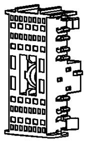
AIRBAG AOS, OSRVM HTR, and REAR DEFOG Fuses and PWR WINDOW (S) Circuit Breaker

Fuse Block - Body X1

Connector Part Information





Harness: Instrument Panel

OEM: 15477823

Service: 13574911

Description: 56-Way F GT 150 280 Metri-Pack Series (L-GY)

Terminal Part Information

Pins: A4-A6, C1-C5, C7-C8, H1-H8, K2-K5, K7-K8

Terminal/Tray: 12191812/19

Core/Insulation Crimp: Pins: A4-A6, C2, C4-C5, C7, H3-H4, H6-H8, K2-K5, K7-K8 - E/C

Core/Insulation Crimp: Pins: C1, C3, C8, H1-H2, H5 - C/A

Release Tool/Test Probe: J-38125-553/J-35616-2A (GY)

Pins: B1-B5, D5, G3-G4, J5

Terminal/Tray: 15304711/8

Core/Insulation Crimp: Pins: B3 - E/A

Core/Insulation Crimp: Pins: B1-B2, B4-B5, D5, G3-G4, J5 - 2/A

Release Tool/Test Probe: J-38125-553/J-35616-4A (PU)

Pins: E1, F1

Terminal/Tray: 12110127/19

Core/Insulation Crimp: F/G

Release Tool/Test Probe: J-38125-558/J-35616-44 (YE)

Pins: E2

Terminal/Tray: 12065915/5

Core/Insulation Crimp: C/A

Release Tool/Test Probe: J-38125-558/J-35616-44 (YE)

(continued on next page)

Fuse Block - Body X1, cont'd.

Harness: Instrument Panel

Pin	Wire	Circuit	Function
A1-A3	--	--	Not Used
A4	0.35 YE	6817	LED Backlight Dimming Control (K34 or W1Y)
A5	0.35 D-BU	45	Park Lamp Control
A6	0.35 BN	6136	Supply Voltage (K34 or W1Y)
A7-A8	--	--	Not Used
B1	0.8 RD/WH	3240	Battery Positive Voltage (UE1)
B2	1 BN	2109	Trailer Park Lamps Control (UY7)
B3	0.35 BN	341	Ignition Voltage
B4	0.5 BN	2309	Front Park Lamps Control
	0.8 BN	2309	Front Park Lamps Control (C99)
B5	1 BN	2109	Trailer Park Lamps Control (Cutaway)
C1	1 YE	618	Left Rear Turn Signal Lamp Control (Passenger or Cargo)
C2	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control

Pin	Wire	Circuit	Function
C3	1 D-GN	619	Right Rear Turn Signal Lamp Control (Passenger or Cargo)
C4	0.35 WH	193	Rear Defog Relay Control (C49, DE5 or DE7)
C5	0.35 BN	341	Ignition Voltage
C6	--	--	Not Used
C7	0.35 OG	300	Ignition Voltage
C8	0.8 BN	141	Ignition Voltage (LGH)
D1-D4	--	--	Not Used
D5	1 BN	141	Ignition Voltage
E1	5 RD/BK	1042	Battery Positive Voltage (YF7)
E2	0.5 BK	350	Ground
F1	5 BN	541	Ignition Voltage (YF2 or YF7)
F2	--	--	Not Used
G1-G2	--	--	Not Used
G3	0.8 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)

(continued on next page)

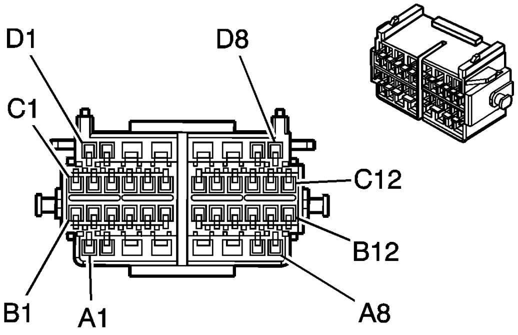
Harness: Instrument Panel, cont'd.

Pin	Wire	Circuit	Function
G4	1 RD/WH	340	Battery Positive Voltage
G5	--	--	Not Used
H1	0.8 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
H2	0.8 D-BU/WH	149	Courtesy Lamp Control (Cutaway)
	0.8 D-BU/WH	149	Courtesy Lamp Control (except YF2 or YF7)
H3	0.35 BK/WH	351	Ground
H4	0.35 YE	43	Ignition Voltage
H5	0.8 RD/WH	4440	Battery Positive Voltage (C49, DE5 or DE7)
H6	0.35 RD/WH	2840	Battery Positive Voltage (except 8S8)
H7	0.35 RD/WH	540	Battery Positive Voltage
H8	0.5 RD/WH	5340	Battery Positive Voltage (AU0 or UJ6)
J1-J4	--	--	Not Used
J5	1 L-GN	1624	Trailer Backup Lamps Control (Cutaway, UY7 or 8S3)

Pin	Wire	Circuit	Function
K1	--	--	Not Used
K2	0.5 YE	356	Driver Door Lock Relay Unlock Control (AU3)
K3	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
K4	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 without PRP)
	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 with PRP)
K5	0.5 YE	356	Driver Door Lock Relay Unlock Control (AU3 without PRP)
	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 with PRP)
K6	--	--	Not Used
K7	0.5 GY/BK	690	Courtesy Lamp Control (YF2 or YF7)
K8	0.35 D-BU	38	Backup Lamp Relay Control

X500 Driver Door Harness to Body Harness

Connector Part Information



Harness Type: Driver Door

OEM Connector: 15448129

Service Connector: 89046969

Description: 40-Way F GT 150 280 Series (BK)

Terminal Part Information

Pins: A1, A7-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8

Terminated Lead: 13575735

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-2A (GY)

Terminal/Tray: 12191812/19

Core/Insulation Crimp:Pins: A1, A8, B1-B4, D7-D8 - E/C

Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - C/A

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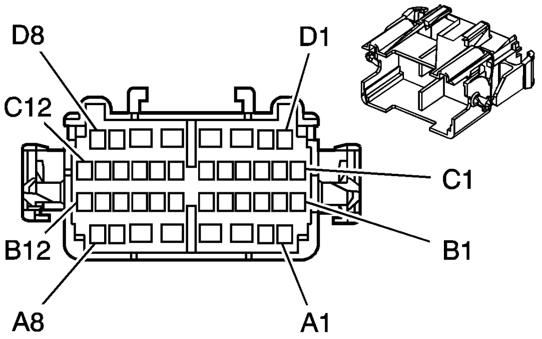
Connector Part Information



Harness Type: Body

OEM Connector: 15416976

Service Connector: 89047197

Description: 40-Way M GT 150 280 Series (BK)

Terminal Part Information

Pins: A1, A6-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8

Terminated Lead: 13575502

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-3 (GY)

Terminal/Tray: 15304702/19

Core/Insulation Crimp: Pins: A1, A6, B1-B4 - E/C

Core/Insulation Crimp: Pins: A8, C1-C2, C7-C8, D7-D8 - E/4

(continued on next page)

X500 Driver Door Harness to Body Harness, cont’d.

Terminal Part Information: Driver Door, *cont'd.*

Pins: A5-A6, D4-D6

Terminated Lead: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 13575753

Terminated Lead: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 13575756

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 15304711/8

Terminal/Tray: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 15304713/19

Core/Insulation Crimp: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - E/A

Core/Insulation Crimp: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - F/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal
A2-A4	--	--	Not Used
A5	0.35 BK	450	Ground (AU3 without DE5, DE7 or A31)
	3 BK	450	Ground (AU3 with DE5, DE7 or A31)

(continued on next page)

Terminal Part Information: Body, *cont'd.*

Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - 2/4

Pins: A5, D4-D6

Terminated Lead: 13575510

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-5 (PU)

Terminal/Tray: 15304724/8

Core/Insulation Crimp: A/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal
A2-A4	--	--	Not Used
A5	3 BK	450	Ground
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3 or A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.5 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)

(continued on next page)

X500 Driver Door Harness to Body Harness, cont'd.

Harness: Driver Door, *cont'd.*

Pin	Wire	Circuit	Function
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3)
	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.35 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)

(continued on next page)

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	1 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)
C3-C6	--	--	Not Used
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
C9-C11	--	--	Not Used

(continued on next page)

X500 Driver Door Harness to Body Harness, cont'd.

Harness: Driver Door, *cont'd.*

Pin	Wire	Circuit	Function
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)
C3-C6	--	--	Not Used
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
C9-C11	--	--	Not Used
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)
D7	0.35 BN/WH	1498	Passenger Mirror Motor Left/Down Control (DE5 or DE7)
D8	0.35 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)
D7	0.5 BN/WH	1498	Passenger Mirror Motor Left/Down Control (DE5 or DE7)
D8	0.5 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

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Front Left Side of Passenger Compartment

(1) Inflatable Restraint Roof Rail Module - Left Front (ASF)

(2) Instrument Panel - Upper Pad

(3) Inflatable Restraint Roof Rail Module - Right Front (ASF)

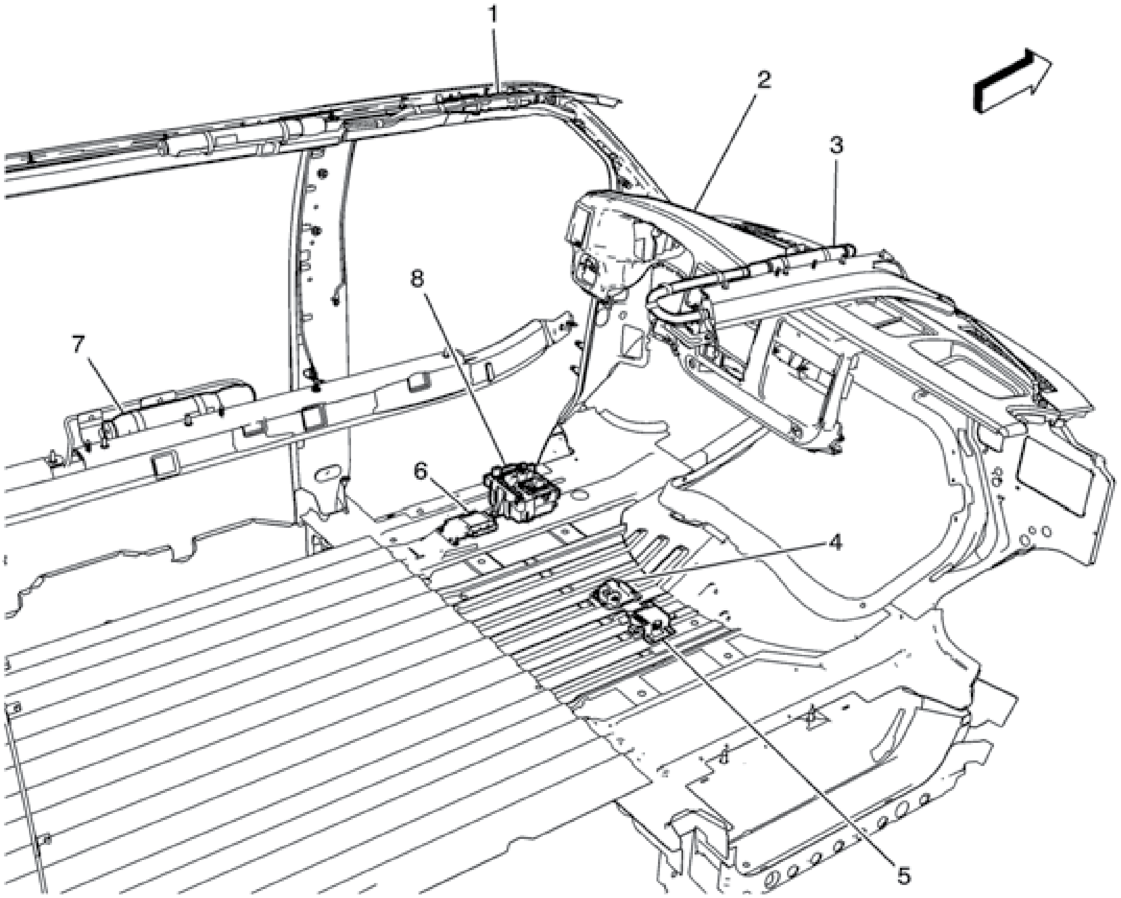
(4) Inflatable Restraint Vehicle Rollover Sensor (ASF)

(5) Yaw and Lateral Accelerometer Sensor (JL4)

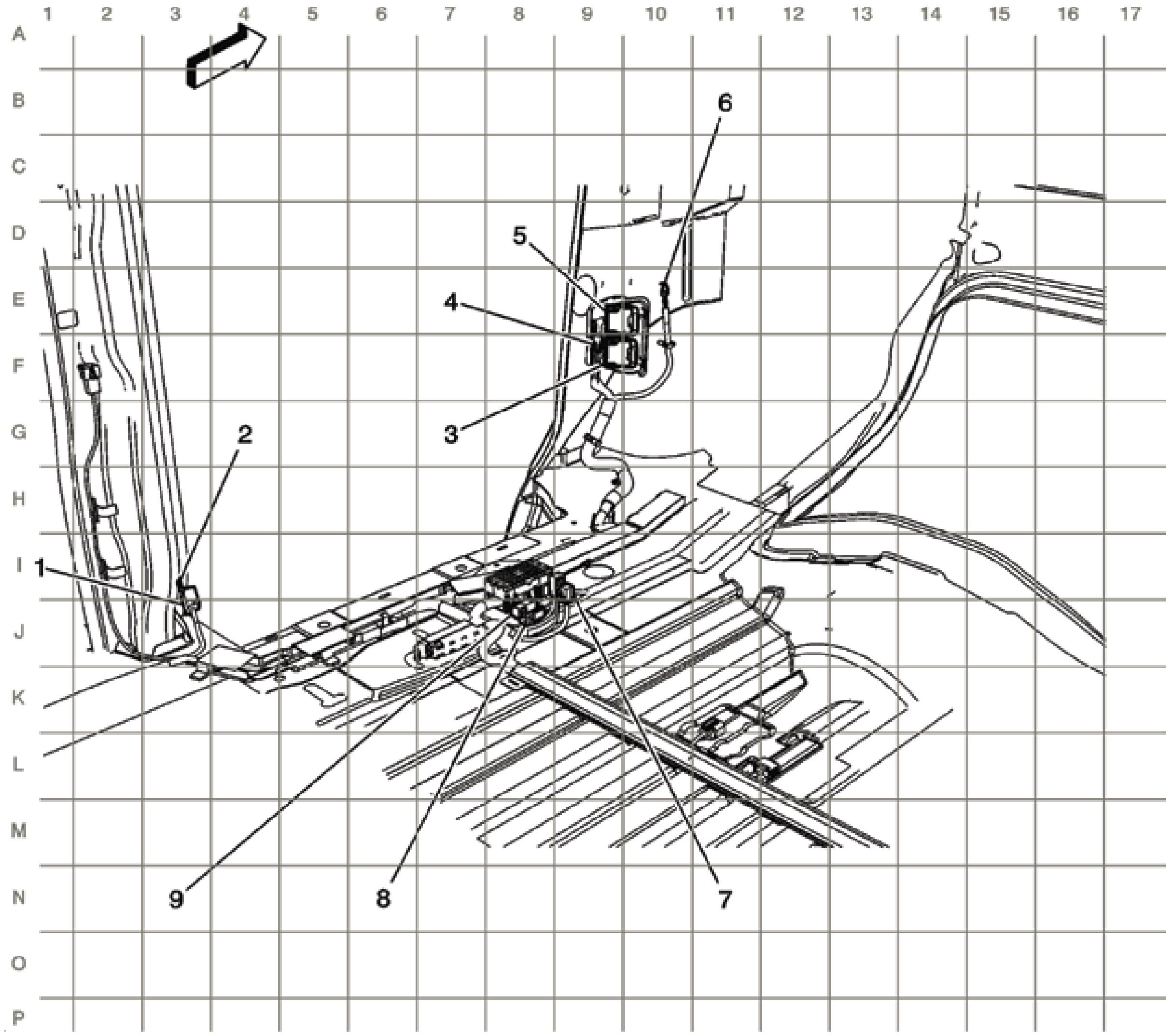
(6) Inflatable Restraint Sensing and Diagnostic Module (SDM)

(7) Inflatable Restraint Roof Rail Module - Right Rear (ASF with YA2)

(8) Fuse Block - Body



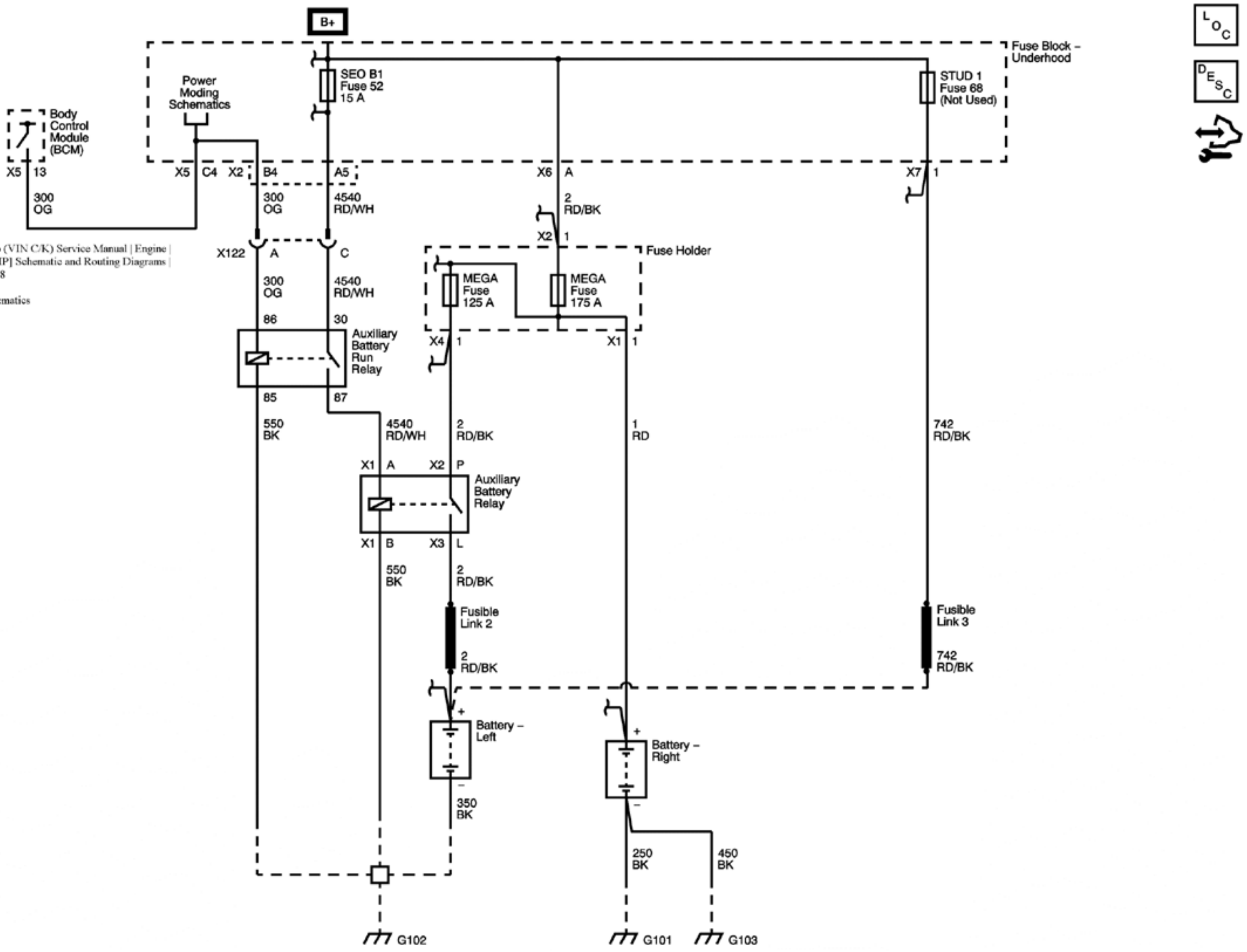
Body Harness Routing - Left Front Passenger Compartment


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
1
2
3
4
5
6
7
8
9

(1) JX347
(2) G347
(3) X500
(4) X319 (C36 with ENC)
(5) X318 (Passenger or Cargo)
(6) G301 and G302
(7) X307
(8) X330
(9) X331

Battery Isolators

Battery isolation can be done in a number of ways. In this section we show you two ways that GM does it. On medium duty trucks we have a diode isolator component that places in line diodes in the battery charge lead going to the alternators. On CK trucks we have a relay isolation scheme. These drawings are provided to show you how you might accomplish your application.

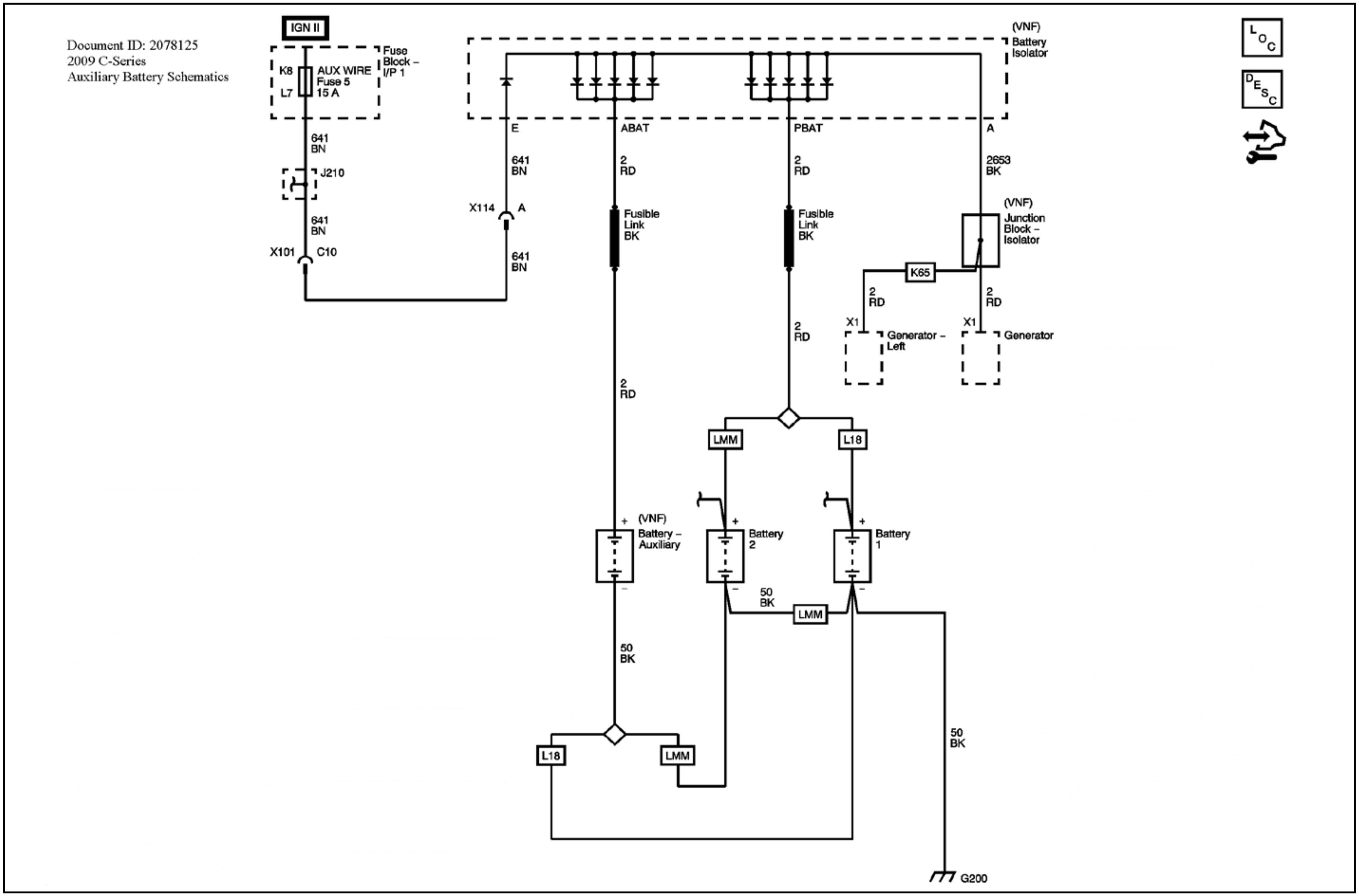

B+
Fuse Block – Underhood
SEO B1 Fuse 52 15 A
STUD 1 Fuse 68 (Not Used)
Power Moding Schematics
Body Control Module (BCM)
X5 13
X5 C4 X2 B4 A5
X6 A
X7 1
300 OG
300 OG
4540 RD/WH
2 RD/BK
X2 1
X122 A C
Fuse Holder
MEGA Fuse 125 A
MEGA Fuse 175 A
300 OG
4540 RD/WH
86 30
Auxiliary Battery Run Relay
85 87
X4 1
X1 1
550 BK
4540 RD/WH
2 RD/BK
1 RD
742 RD/BK
X1 A X2 P
Auxiliary Battery Relay
X1 B X3 L
550 BK
2 RD/BK
Fusible Link 2
2 RD/BK
Fusible Link 3
742 RD/BK
Battery – Left
Battery – Right
350 BK
250 BK
450 BK
G102
G101
G103

2010 Sierra, Silverado (VIN C/K) Service Manual | Engine | Engine Electrical | [WIP] Schematic and Routing Diagrams | Document ID: 2229238

Auxiliary Battery Schematics

(continued on next page)

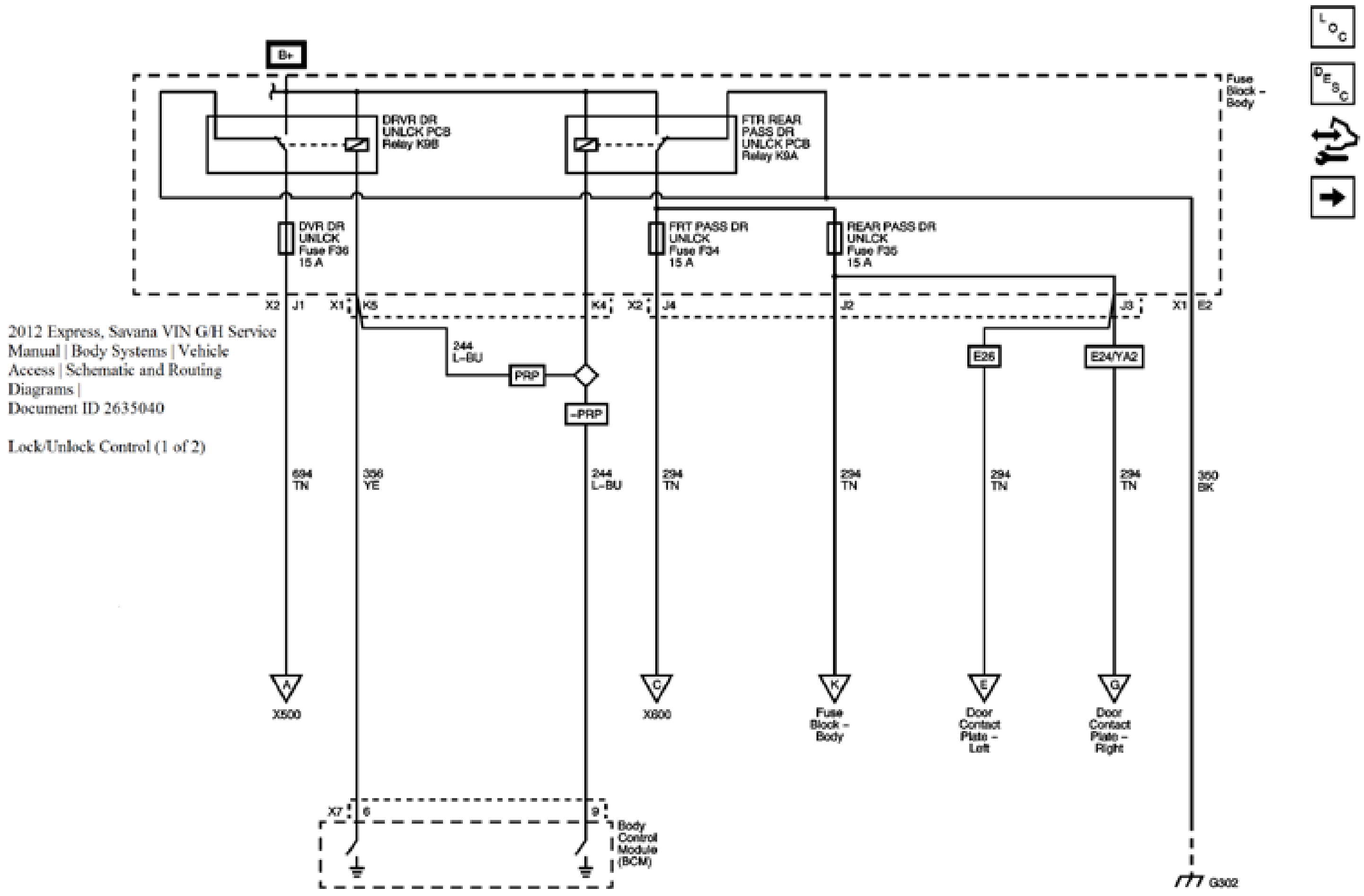
Battery Isolators cont'd.


Document ID: 2078125
2009 C-Series
Auxiliary Battery Schematics
IGN II
K8
L7
AUX WIRE
Fuse 5
15 A
Fuse Block – I/P 1
641 BN
J210
641 BN
X101
C10
(VNF) Battery Isolator
E
ABAT
PBAT
A
641 BN
X114
A
641 BN
2 RD
Fusible Link BK
2 RD
Fusible Link BK
2 RD
2 RD
2653 BK
(VNF) Junction Block – Isolator
K65
2 RD
2 RD
X1
Generator – Left
X1
Generator
LMM
L18
(VNF) Battery – Auxiliary
Battery 2
Battery 1
+
–
50 BK
LMM
50 BK
L18
LMM
50 BK
G200

Door Lock and Unlock – from outside the cab

Control access to [driver door lock and unlock switch signals] can be found in the driver door to body harness connector X-500 cavities B1 and B2 – see schematic – Door Lock Switches.

Access to lock and unlock an external door [patient module door or service body door] can be accessed on the passenger side door connector X-600 cavities A2 and B2 – see schematic – Door Latches and Actuators

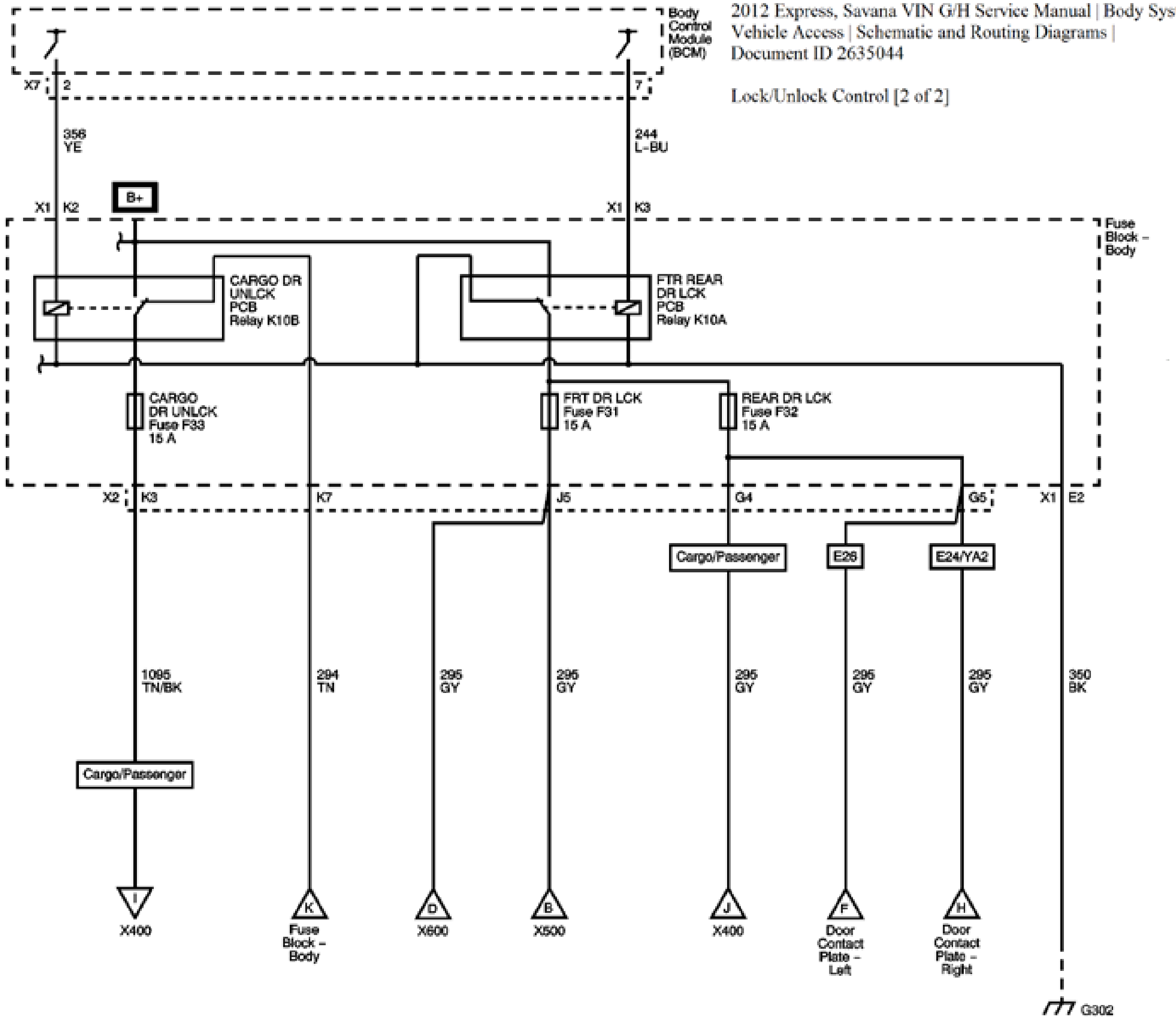

B+
Fuse Block – Body
DRVR DR UNLCK PCB Relay K9B
FTR REAR PASS DR UNLCK PCB Relay K9A
DVR DR UNLCK Fuse F36 15 A
FRT PASS DR UNLCK Fuse F34 15 A
REAR PASS DR UNLCK Fuse F35 15 A
X2 J1
X1 K5
K4
X2 J4
J2
J3
X1 E2
244 L-BU
PRP
-PRP
E26
E24/YA2
694 TN
356 YE
244 L-BU
294 TN
294 TN
294 TN
294 TN
350 BK
A
X500
C
X600
K
Fuse Block – Body
E
Door Contact Plate – Left
G
Door Contact Plate – Right
X7 6
9
Body Control Module (BCM)
G302

2012 Express, Savana VIN G/H Service Manual | Body Systems | Vehicle Access | Schematic and Routing Diagrams | Document ID 2635040

Lock/Unlock Control (1 of 2)

(continued on next page)

Door Lock and Unlock – from outside the cab, cont'd.



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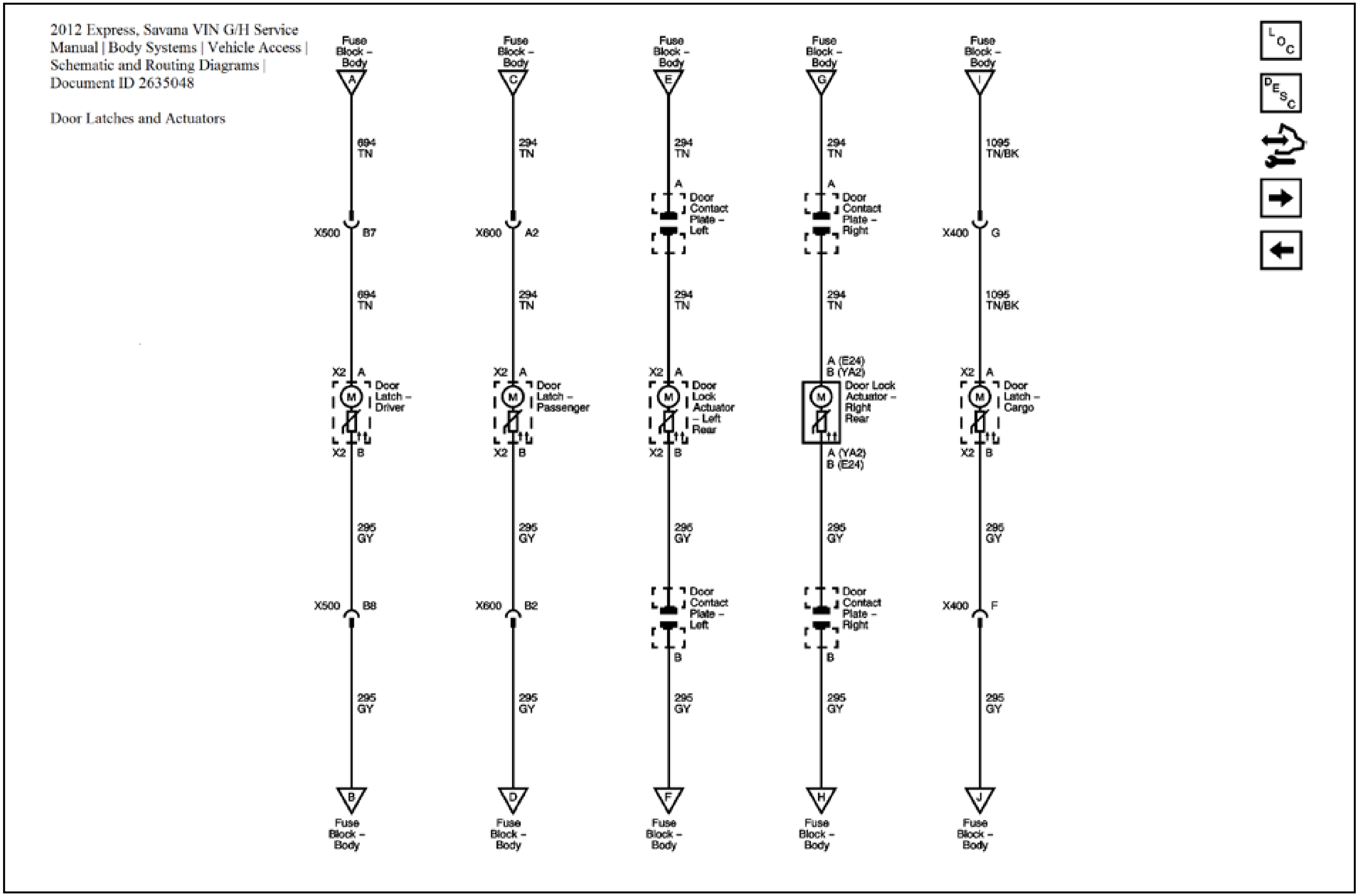
Lock/Unlock Control [2 of 2]

Body Control Module (BCM)
X7
2
7
356
YE
244
L-BU
X1
K2
B+
X1
K3
Fuse Block – Body
CARGO DR UNLCK PCB Relay K10B
FTR REAR DR LCK PCB Relay K10A
CARGO DR UNLCK Fuse F33 15 A
FRT DR LCK Fuse F31 15 A
REAR DR LCK Fuse F32 15 A
X2
K3
K7
J5
G4
G5
X1
E2
Cargo/Passenger
E26
E24/YA2
1095
TN/BK
294
TN
295
GY
295
GY
295
GY
295
GY
295
GY
350
BK
Cargo/Passenger
I
X400
K
Fuse Block – Body
D
X600
B
X500
J
X400
F
Door Contact Plate – Left
H
Door Contact Plate – Right
G302

(continued on next page)

Door Lock and Unlock – from outside the cab, cont'd.



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Door Latches and Actuators

Fuse Block – Body
A
694 TN
X500 B7
694 TN
X2 A
Door Latch – Driver
M
X2 B
295 GY
X500 B8
295 GY
B
Fuse Block – Body
Fuse Block – Body
C
294 TN
X600 A2
294 TN
X2 A
Door Latch – Passenger
M
X2 B
295 GY
X600 B2
295 GY
D
Fuse Block – Body
Fuse Block – Body
E
294 TN
A
Door Contact Plate – Left
294 TN
X2 A
Door Lock Actuator – Left Rear
M
X2 B
295 GY
Door Contact Plate – Left
B
295 GY
F
Fuse Block – Body
Fuse Block – Body
G
294 TN
A
Door Contact Plate – Right
294 TN
A (E24)
B (YA2)
Door Lock Actuator – Right Rear
M
A (YA2)
B (E24)
295 GY
Door Contact Plate – Right
B
295 GY
H
Fuse Block – Body
Fuse Block – Body
I
1095 TN/BK
X400 G
1095 TN/BK
X2 A
Door Latch – Cargo
M
X2 B
295 GY
X400 F
295 GY
J
Fuse Block – Body
LOC
DESC

(continued on next page)

Door Lock and Unlock – from outside the cab, cont'd.

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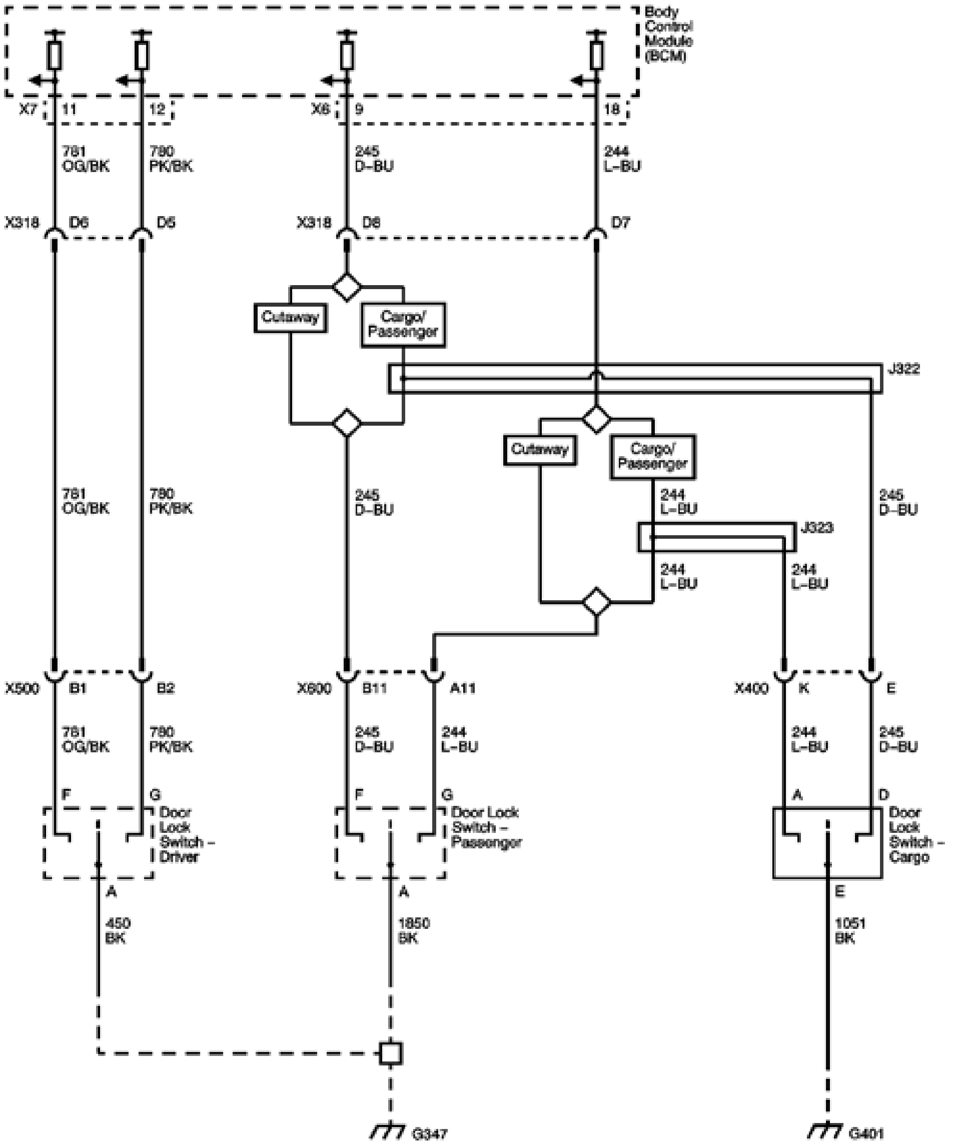
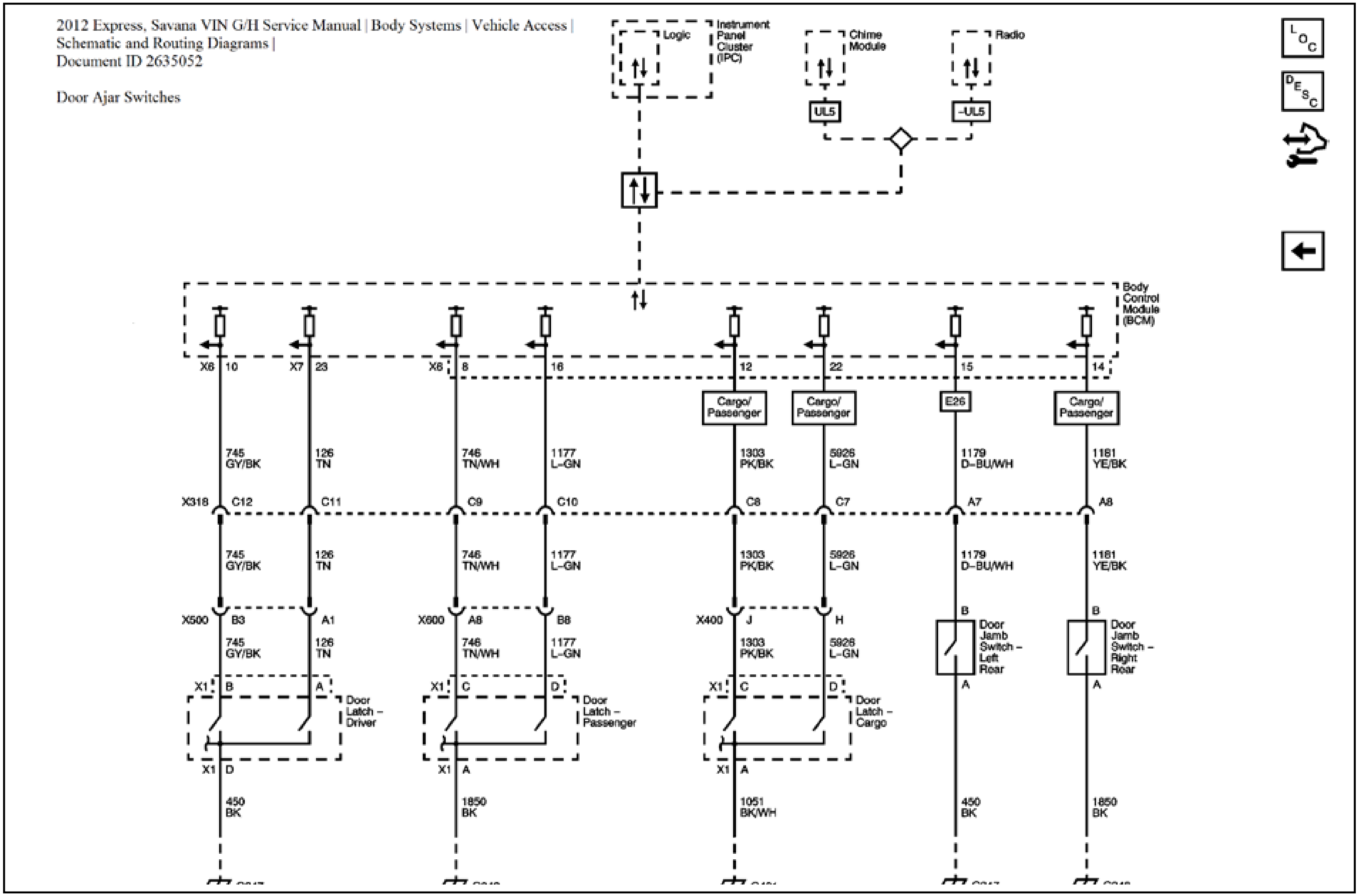
Door Lock Switches


Body Control Module (BCM)
X7
11
12
X6
9
18
781 OG/BK
780 PK/BK
245 D-BU
244 L-BU
X318
D6
D5
X318
D8
D7
Cutaway
Cargo/ Passenger
J322
Cutaway
Cargo/ Passenger
781 OG/BK
780 PK/BK
245 D-BU
244 L-BU
245 D-BU
J323
244 L-BU
244 L-BU
X500
B1
B2
X600
B11
A11
X400
K
E
781 OG/BK
780 PK/BK
245 D-BU
244 L-BU
244 L-BU
245 D-BU
F
G
Door Lock Switch – Driver
F
G
Door Lock Switch – Passenger
A
D
Door Lock Switch – Cargo
A
450 BK
A
1850 BK
E
1051 BK
G347
G401

(continued on next page)

Door Lock and Unlock – from outside the cab, cont'd.



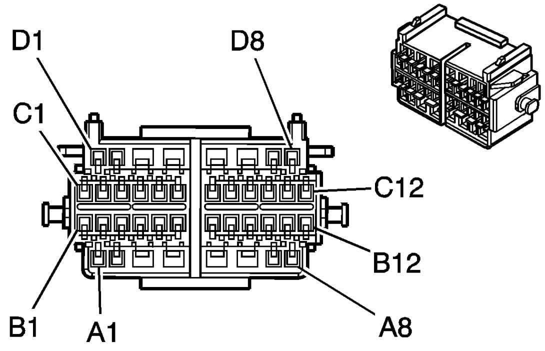
2012 Express, Savana VIN G/H Service Manual | Body Systems | Vehicle Access | Schematic and Routing Diagrams | Document ID 2635052

Door Ajar Switches

Logic
Instrument Panel Cluster (IPC)
Chime Module
Radio
UL5
-UL5
Body Control Module (BCM)
X6 10
X7 23
X6 8
16
12
22
15
14
Cargo/ Passenger
Cargo/ Passenger
E26
Cargo/ Passenger
745 GY/BK
126 TN
746 TN/WH
1177 L-GN
1303 PK/BK
5926 L-GN
1179 D-BU/WH
1181 YE/BK
X318 C12
C11
C9
C10
C8
C7
A7
A8
X500 B3
A1
X600 A8
B8
X400 J
H
B
Door Jamb Switch – Left Rear
Door Jamb Switch – Right Rear
A
X1 B
A
Door Latch – Driver
X1 C
D
Door Latch – Passenger
X1 C
D
Door Latch – Cargo
X1 D
X1 A
X1 A
450 BK
1850 BK
1051 BK/WH
450 BK
1850 BK

X500 Driver Door Harness to Body Harness

Connector Part Information



Harness Type: Driver Door
OEM Connector: 15448129
Service Connector: 89046969
Description: 40-Way F GT 150 280 Series (BK)

Terminal Part Information

Pins: A1, A7-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8
Terminated Lead: 13575735
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 12191812/19
Core/Insulation Crimp:Pins: A1, A8, B1-B4, D7-D8 - E/C
Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - C/A

Pins: A5-A6, D4-D6
Terminated Lead: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 13575753

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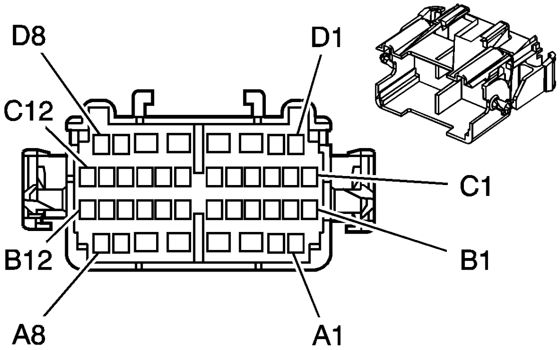
Connector Part Information



Harness Type: Body
OEM Connector: 15416976
Service Connector: 89047197
Description: 40-Way M GT 150 280 Series (BK)

Terminal Part Information

Pins: A1, A6-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8
Terminated Lead: 13575502
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 15304702/19
Core/Insulation Crimp: Pins: A1, A6, B1-B4 - E/C
Core/Insulation Crimp: Pins: A8, C1-C2, C7-C8, D7-D8 - E/4
Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - 2/4

(continued on next page)

X500 Driver Door Harness to Body Harness, cont'd.

Terminal Part Information: Driver Door, *cont'd.*

Terminated Lead: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 13575756

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 15304711/8

Terminal/Tray: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 15304713/19

Core/Insulation Crimp: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - E/A

Core/Insulation Crimp: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - F/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal
A2-A4	--	--	Not Used
A5	0.35 BK	450	Ground (AU3 without DE5, DE7 or A31)
	3 BK	450	Ground (AU3 with DE5, DE7 or A31)
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3)
	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.35 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)

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Terminal Part Information: Body, *cont'd.*

Pins: A5, D4-D6

Terminated Lead: 13575510

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-5 (PU)

Terminal/Tray: 15304724/8

Core/Insulation Crimp: A/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal
A2-A4	--	--	Not Used
A5	3 BK	450	Ground
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3 or A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.5 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used

(continued on next page)

X500 Driver Door Harness to Body Harness, cont'd.

Harness: Driver Door, *cont'd.*

Pin	Wire	Circuit	Function
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)
C3-C6	--	--	Not Used
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
C9-C11	--	--	Not Used

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	1 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)
C3-C6	--	--	Not Used
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
C9-C11	--	--	Not Used
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)

(continued on next page)

X500 Driver Door Harness to Body Harness, cont'd.

Harness: Driver Door, *cont'd.*

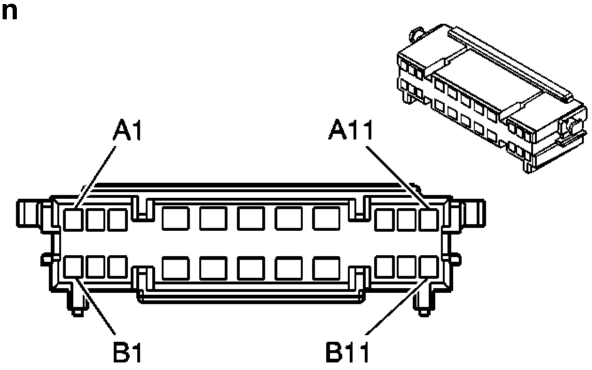
Pin	Wire	Circuit	Function
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)
D7	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
D8	0.35 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
D7	0.5 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
D8	0.5 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

X600 Passenger Door Harness to Body Harness

Connector Part Information



Harness Type: Passenger Door

OEM Connector: 15326063

Service Connector: 15326063

Description: 22-Way F GT 150, 280 (GY)

Terminal Part Information

Pins: A1-A3, A9-A11, B1-B3, B10-B11

Terminated Lead: 13575735

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-2A (GY)

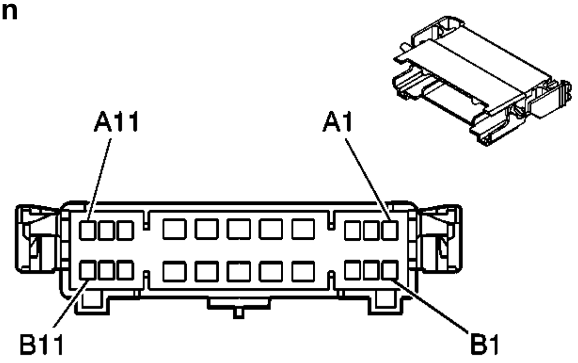
Terminal/Tray: 12191812/19

Core/Insulation Crimp: Pins: A1-A3, B1-B2 - C/A

Core/Insulation Crimp: Pins: A9-A11, B3, B10-B11 - E/C

(continued on next page)

Connector Part Information



Harness Type: Body

OEM Connector: 15326064

Service Connector: 15326064

Description: 22-Way M GT 150, 280 (GY)

Terminal Part Information

Pins: A1-A3, A9-A11, B1-B3, B10-B11

Terminated Lead: 13575502

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-3 (GY)

Terminal/Tray: 15304702/19

Core/Insulation Crimp: Pins: A1-A3, B1-B2 - 2/4

Core/Insulation Crimp: Pins: A9, A11, B11 - E/C

Core/Insulation Crimp: Pins: A10, B3, B10 - E/4

(continued on next page)

X600 Passenger Door Harness to Body Harness, cont'd.

Terminal Part Information: Passenger Door, *cont'd*.

Pins: A4, B4-B5
Terminated Lead: 13575756
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304713/19
Core/Insulation Crimp: F/D

Pins: A5-A8, B6-B8
Terminated Lead: 13575753
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pin A5 - 2/A
Core/Insulation Crimp: Pins: A6-A8, B6-B8 - E/A

Pin	Wire	Circuit	Function
A1	0.8 OG	1853	Right Front Midrange Speaker Output (+)
A2	0.8 TN	294	Door Lock Actuator Unlock Control (AU3)
A3	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A4	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)

(continued on next page)

Terminal Part Information: Body, *cont'd.*

Pins: A4, B4-B5
Terminated Lead: 13575510
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: 15304724/8
Core/Insulation Crimp: A/D

Pins: A5-A8, B6-B8
Terminated Lead: 13575507
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: Pin A5 - 15304724/8
Terminal/Tray: Pins: A6-A8, B6-B8 - 15304722/8
Core/Insulation Crimp: Pin A5 - 2/A
Core/Insulation Crimp: Pins: A6-A8, B6-B8 - E/C

Pin	Wire	Circuit	Function
A1	0.8 OG	1853	Right Front Midrange Speaker Output (+)
A2	0.8 TN	294	Door Lock Actuator Unlock Control (AU3)
A3	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)

(continued on next page)

X600 Passenger Door Harness to Body Harness, cont'd.

Harness: Passenger Door, *cont'd.*

Pin	Wire	Circuit	Function
A5	0.8 BK	1850	Ground
A6	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
A7	0.35 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)
A8	0.35 TN/WH	746	Right Front Door Ajar Switch Signal
A9	0.35 BK	1850	Ground
A10	0.5 D-GN	2134	Side Impact Sensing Module - Right - Signal
A11	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
B1	0.8 D-GN	1953	Right Front Midrange Speaker Output (-)
B2	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
B3	0.5 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
B4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
B5	3 D-GN	1001	RAP Control (A31)
B6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3)
	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (A31)

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
A4	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
A5	0.8 BK	1850	Ground
A6	0.5 BN/WH	1498	Passenger Mirror Motor Left/Down Control (DE5 or DE7)
A7	0.5 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)
A8	0.35 TN/WH	746	Right Front Door Ajar Switch Signal
A9	0.35 BK	1850	Ground
A10	0.5 D-GN	2134	Side Impact Sensing Module - Right -- Signal
A11	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
B1	0.8 D-GN	1953	Right Front Midrange Speaker Output (-)
B2	1 GY	295	Door Lock Actuator Lock Control (AU3)
B3	0.5 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
B4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
B5	3 D-GN	1001	RAP Control (A31)
B6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3 or A31)

(continued on next page)

X600 Passenger Door Harness to Body Harness, cont'd.

Harness: Passenger Door, *cont'd.*

Pin	Wire	Circuit	Function
B7	0.35 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B8	0.35 L-GN	1177	Right Front Door Open Switch Signal
B9	--	--	Not Used
B10	0.5 WH/BK	6629	Low Reference (ASF)
B11	0.35 D-BU	245	Passenger Door Lock Switch Unlock Control (AU3)

Harness: Body, *cont'd.*

Pin	Wire	Circuit	Function
B7	0.5 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B8	0.35 L-GN	1177	Right Front Door Open Switch Signal
B9	--	--	Not Used
B10	0.5 WH/BK	6629	Low Reference (ASF)
B11	0.35 D-BU	245	Passenger Door Lock Switch Unlock Control (AU3)

Charging System Description and Operation

Electrical Power Management Overview

The electrical power management system is designed to monitor and control the charging system and send diagnostic messages to alert the driver of possible problems with the battery and generator. This electrical power management system primarily utilizes existing on-board computer capability to maximize the effectiveness of the generator, to manage the load, improve battery state-of-charge and life, and minimize the system's impact on fuel economy. The electrical power management system performs 3 functions:

- It monitors the battery voltage and estimates the battery condition.
- It takes corrective actions by boosting idle speeds, and adjusting the regulated voltage.
- It performs diagnostics and driver notification.

The battery condition is estimated during ignition-off and during ignition-on. During ignition-off the state-of-charge of the battery is determined by measuring the open-circuit voltage. The state-of-charge is a function of the acid concentration and the internal resistance of the battery, and is estimated by reading the battery open circuit voltage when the battery has been at rest for several hours.

The state-of-charge can be used as a diagnostic tool to tell the customer or the dealer the condition of the battery. Throughout ignition-on, the algorithm continuously estimates state-of-charge based on adjusted net amp hours, battery capacity, initial state-of-charge, and temperature.

While running, the battery degree of discharge is primarily determined by a battery current sensor, which is integrated to obtain net amp hours.

In addition, the electrical power management function is designed to perform regulated voltage control to improve battery state-of-charge, battery life, and fuel economy. This is accomplished by using knowledge of the battery state-of-charge and temperature to set the charging voltage to an optimum battery voltage level for recharging without detriment to battery life.

The Charging System Description and Operation is divided into 3 sections. The first section describes the charging system components and their integration into the electrical power management. The second section describes charging system operation. The third section describes the instrument panel cluster operation of the charge indicator, driver information center messages, and voltmeter operation.

(continued on next page)

Charging System Description and Operation, cont'd.

CHARGING SYSTEM COMPONENTS

Generator

The generator is a serviceable component. If there is a diagnosed failure of the generator it must be replaced as an assembly. The engine drive belt drives the generator. When the rotor is spun it induces an alternating current (AC) into the stator windings. The AC voltage is then sent through a series of diodes for rectification. The rectified voltage has been converted into a direct current (DC) for use by the vehicles electrical system to maintain electrical loads and the battery charge. The voltage regulator integral to the generator controls the output of the generator. It is not serviceable. The voltage regulator controls the amount of current provided to the rotor. If the generator has field control circuit failure, the generator defaults to an output voltage of 13.8 V.

Body Control Module (BCM)

The body control module (BCM) is a GMLAN device. It communicates with the engine control module (ECM) and the instrument panel cluster for electrical power management (electrical power management) operation. The BCM determines the output of the generator and sends the information to the ECM for control of the generator turn on signal circuit. It monitors the generator field duty cycle signal circuit information sent from the ECM for control of the generator. It monitors a battery current sensor, the battery positive voltage circuit, and estimated battery temperature to determine battery state of charge. The BCM performs idle boost.

Battery Current Sensor

The battery current sensor is a serviceable component that is connected to the negative battery cable at the battery. The battery current sensor is a 3-wire hall effect current sensor. The battery current sensor monitors the battery current. It directly inputs to the BCM. It creates a 5-volt pulse width modulation (PWM) signal of 128 Hz with a duty cycle of 0-100 percent. Normal duty cycle is between 5-95 percent. Between 0-5 percent and 95-100 percent are for diagnostic purposes.

Engine Control Module (ECM)

When the engine is running, the generator turn-on signal is sent to the generator from the ECM, turning on the regulator. The generator’s voltage regulator controls current to the rotor, thereby controlling the output voltage. The rotor current is proportional to the electrical pulse width supplied by the regulator. When the engine is started, the regulator senses generator rotation by detecting AC voltage at the stator through an internal wire. Once the engine is running, the regulator varies the field current by controlling the pulse width. This regulates the generator output voltage for proper battery charging and electrical system operation. The generator field duty terminal is connected internally to the voltage regulator and externally to the ECM. When the voltage regulator detects a charging system problem, it grounds this circuit to signal the ECM that a problem exists. The ECM monitors the generator field duty cycle signal circuit, and receives control decisions based on information from the BCM.

(continued on next page)

Charging System Description and Operation, cont'd.

CHARGING SYSTEM COMPONENTS, ***cont'd.***

Instrument Panel Cluster

The instrument panel cluster provides the customer notification in case a concern with the charging system. There are 2 means of notification, a charge indicator and a driver information center message of SERVICE BATTERY CHARGING SYSTEM if equipped.

(continued on next page)

Charging System Description and Operation, cont'd.

CHARGING SYSTEM OPERATION

The purpose of the charging system is to maintain the battery charge and vehicle loads. There are 6 modes of operation and they include:

- Battery Sulfation Mode
- Charge Mode
- Fuel Economy Mode
- Headlamp Mode
- Start Up Mode
- Voltage Reduction Mode

The engine control module (ECM) controls the generator through the generator turn ON signal circuit. The ECM monitors the generator performance though the generator field duty cycle signal circuit. The signal is a pulse width modulation (PWM) signal of 128 Hz with a duty cycle of 0-100 percent. Normal duty cycle is between 5-95 percent. Between 0-5 percent and 95-100 percent are for diagnostic purposes. The following table shows the commanded duty cycle and output voltage of the generator:

Commanded Duty Cycle	Generator Output Voltage
10%	11 V
20%	11.56 V
30%	12.12 V
40%	12.68 V
50%	13.25 V
60%	13.81 V
70%	14.37 V
80%	14.94 V
90%	15.5 V

The generator provides a feedback signal of the generator voltage output through the generator field duty cycle signal circuit to the ECM. This information is sent to the body control module (BCM). The signal is PWM signal of 128 Hz with a duty cycle of 0-100 percent. Normal duty cycle is between 5-99 percent. Between 0-5 percent and 100 percent are for diagnostic purposes.

(continued on next page)

Charging System Description and Operation, cont'd.

CHARGING SYSTEM OPERATION, ***cont'd.***

Battery Sulfation Mode

The BCM will enter this mode when the interpreted generator output voltage is less than 13.2 V for 45 minutes. When this condition exists the BCM will enter Charge Mode for 2-3 minutes. The BCM will then determine which mode to enter depending on voltage requirements.

Charge Mode

The BCM will enter Charge Mode when ever one of the following conditions are met.

- The wipers are ON for than 3 seconds.
- GMLAN (Climate Control Voltage Boost Mode Request) is true, as sensed by the HVAC control head. High speed cooling fan, rear defogger and HVAC high speed blower operation can cause the BCM to enter the Charge Mode.
- The estimated battery temperature is less than 0°C (32°F).
- Battery State of Charge is less than 80 percent.
- Vehicle speed is greater than 145 km/h (90 mph)
- Current sensor fault exists.
- System voltage was determined to be below 12.56 V

When any one of these conditions is met, the system will set targeted generator output voltage to a charging voltage between 13.9-15.5 V, depending on the battery state of charge and estimated battery temperature.

Fuel Economy Mode

The BCM will enter Fuel Economy Mode when the estimated battery temperature is at least 0°C (32°F) but less than or equal to 80°C (176°F), the calculated battery current is less than 15 amperes and greater than -8 amperes, and the battery state-of-charge is greater than or equal to 80 percent. Its targeted generator output voltage is the open circuit voltage of the battery and can be between 12.5-13.1 V. The BCM will exit this mode and enter Charge Mode when any of the conditions described above are present.

Headlamp Mode

The BCM will enter Headlamp Mode when ever the headlamps are ON (high or low beams). Voltage will be regulated between 13.9-14.5 V.

(continued on next page)

Charging System Description and Operation, cont'd.

CHARGING SYSTEM OPERATION, ***cont'd.***

Start Up Mode

When the engine is started the BCM sets a targeted generator output voltage of 14.5 V for 30 seconds.

Voltage Reduction Mode

The BCM will enter Voltage Reduction Mode when the calculated ambient air temperature is above 0°C (32°F). The calculated battery current is less than 1 ampere and greater than -7 amperes, and the generator field duty cycle is less than 99 percent. Its targeted generator output voltage is 12.9 V. The BCM will exit this mode once the criteria are met for Charge Mode.

Charging System Description and Operation, cont'd.

INSTRUMENT PANEL CLUSTER OPERATION

Charge Indicator Operation

The instrument panel cluster illuminates the charge indicator and displays a warning message in the driver information center if equipped, when the one or more of the following occurs:

- The engine control module (ECM) detects that the generator output is less than 11 V or greater than 16 V. The instrument panel cluster receives a GMLAN message from the ECM requesting illumination.
- The instrument panel cluster determines that the system voltage is less than 11 V or greater than 16 V for more than 30 seconds. The instrument panel cluster receives a GMLAN message from the body control module (BCM) indicating there is a system voltage range concern.
- The instrument panel cluster performs the displays test at the start of each ignition cycle. The indicator illuminates for approximately 3 seconds.

BATTERY NOT CHARGING SERVICE CHARGING SYSTEM

The BCM and the ECM will send a GMLAN message to the driver information center for the BATTERY NOT CHARGING SERVICE CHARGING SYSTEM message to be displayed. It is commanded ON when a charging system DTC is a current DTC. The message is turned OFF when the conditions for clearing the DTC have been met.

SERVICE BATTERY CHARGING SYSTEM

The BCM and the ECM will send a GMLAN message to the driver information center for the SERVICE BATTERY CHARGING SYSTEM message to be displayed. It is commanded ON when a charging system DTC is a current DTC. The message is turned OFF when the conditions for clearing the DTC have been met.

Fast Idle (UF3)

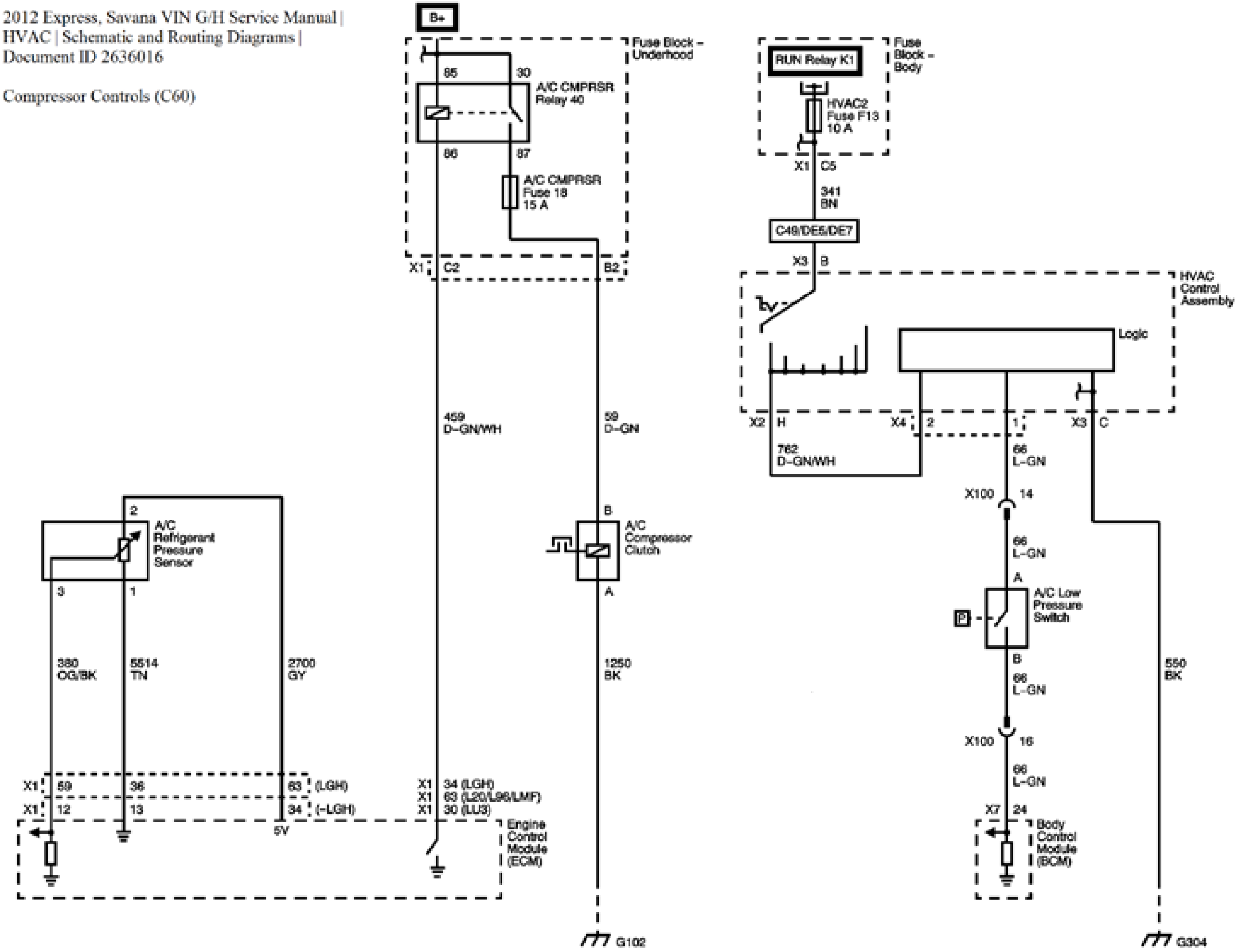
Engine idle up feature – option code UF3 – can be added on units with 6.0L gas or 6.6L Diesel engines and cruise control provided it was available on your model but not ordered. To assure availability for your model go to **www.gmupfitter.com** and select 'quick links' then 'GM Links' then 'On Line Order Guide' and enter your vehicle information. Here is the link **http://eogld.ecomm.gm.com/dmdindex.htm**

HVAC Compressor Control – Remote

Remote control of the HVAC compressor can be accomplished by supplying a ground at the low pressure switch cavity A – see schematic and locator drawing.

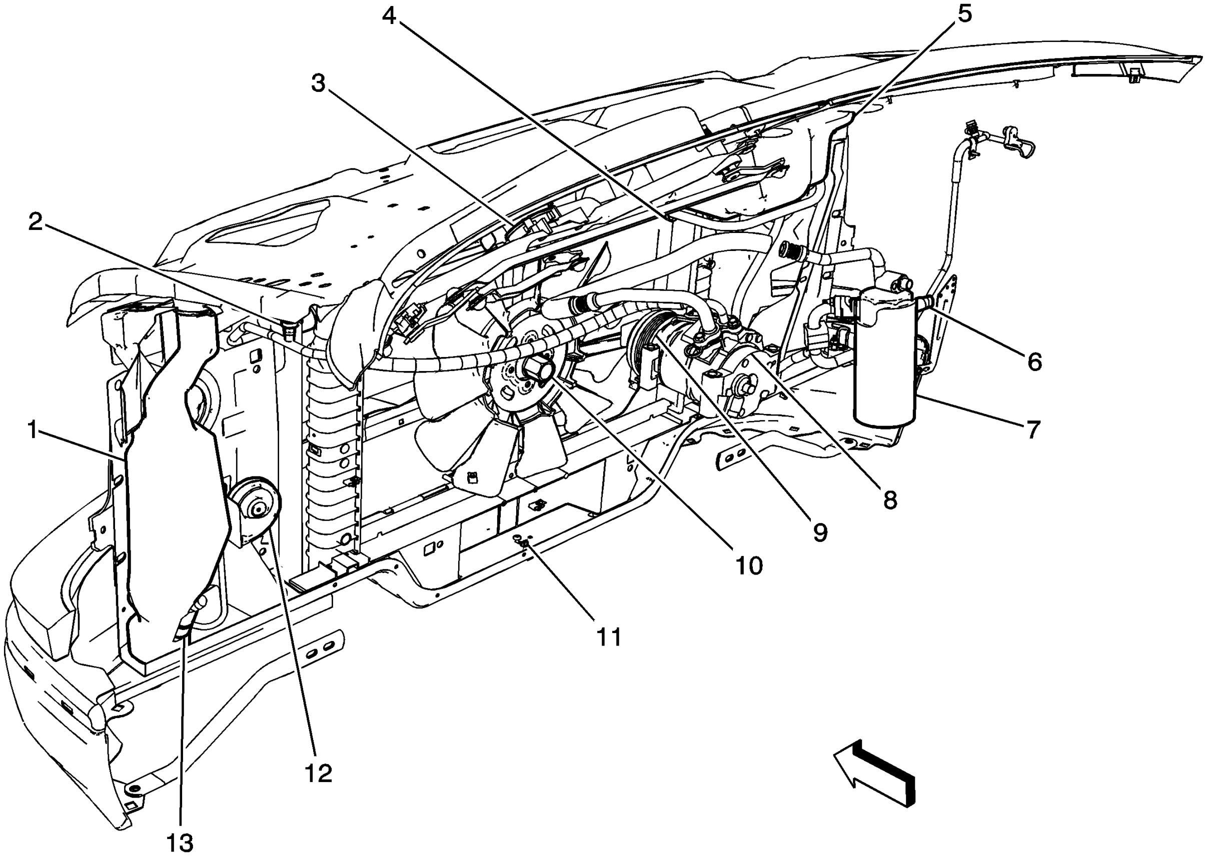
2012 Express, Savana VIN G/H Service Manual | HVAC | Schematic and Routing Diagrams | Document ID 2636016

Compressor Controls (C60)


B+
Fuse Block – Underhood
85
30
A/C CMPRSR Relay 40
86
87
A/C CMPRSR Fuse 18 15 A
X1
C2
B2
459 D–GN/WH
59 D–GN
RUN Relay K1
Fuse Block – Body
HVAC2 Fuse F13 10 A
X1 C5
341 BN
C49/DE5/DE7
X3 B
HVAC Control Assembly
Logic
X2 H
X4 2
1
X3 C
762 D–GN/WH
66 L–GN
X100 14
66 L–GN
A
A/C Low Pressure Switch
P
B
66 L–GN
X100 16
66 L–GN
X7 24
Body Control Module (BCM)
550 BK
G304
2
A/C Refrigerant Pressure Sensor
3
1
380 OG/BK
5514 TN
2700 GY
X1 59 36 63 (LGH)
X1 12 13 34 (–LGH)
5V
X1 34 (LGH)
X1 63 (L20/L96/LMF)
X1 30 (LU3)
Engine Control Module (ECM)
B
A/C Compressor Clutch
A
1250 BK
G102

Front of Engine Compartment

(1) Windshield Washer Solvent Container
(2) A/C Refrigerent Pressure Sensor (C60)
(3) Windshield Wiper Motor
(4) Engine Coolant Level Switch (LMM)
(5) Coolant Surge Tank
(6) A/C Low Pressure Switch (C60)
(7) A/C Accumulator (C60)
(8) A/C Compressor (C60)
(9) A/C Compressor Clutch (C60)
(10) Engine Cooling Fan Clutch
(11) Inflatable Restraint Front End Sensor
(12) Horn Assembly
(13) Windshield Washer Fluid Pump



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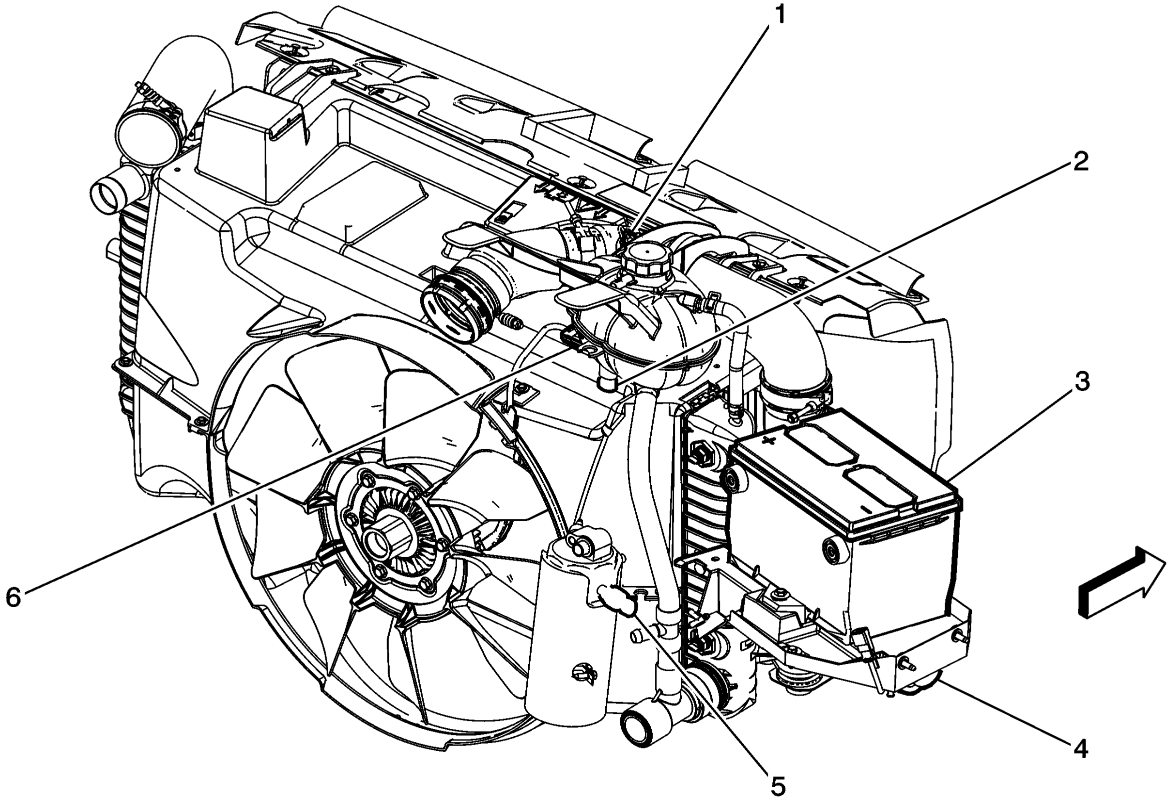
Front of Engine Compartment, cont'd.



(1) Charge Air Cooler Outlet Temperature Sensor

(2) Engine Coolant Level Switch

(3) Battery

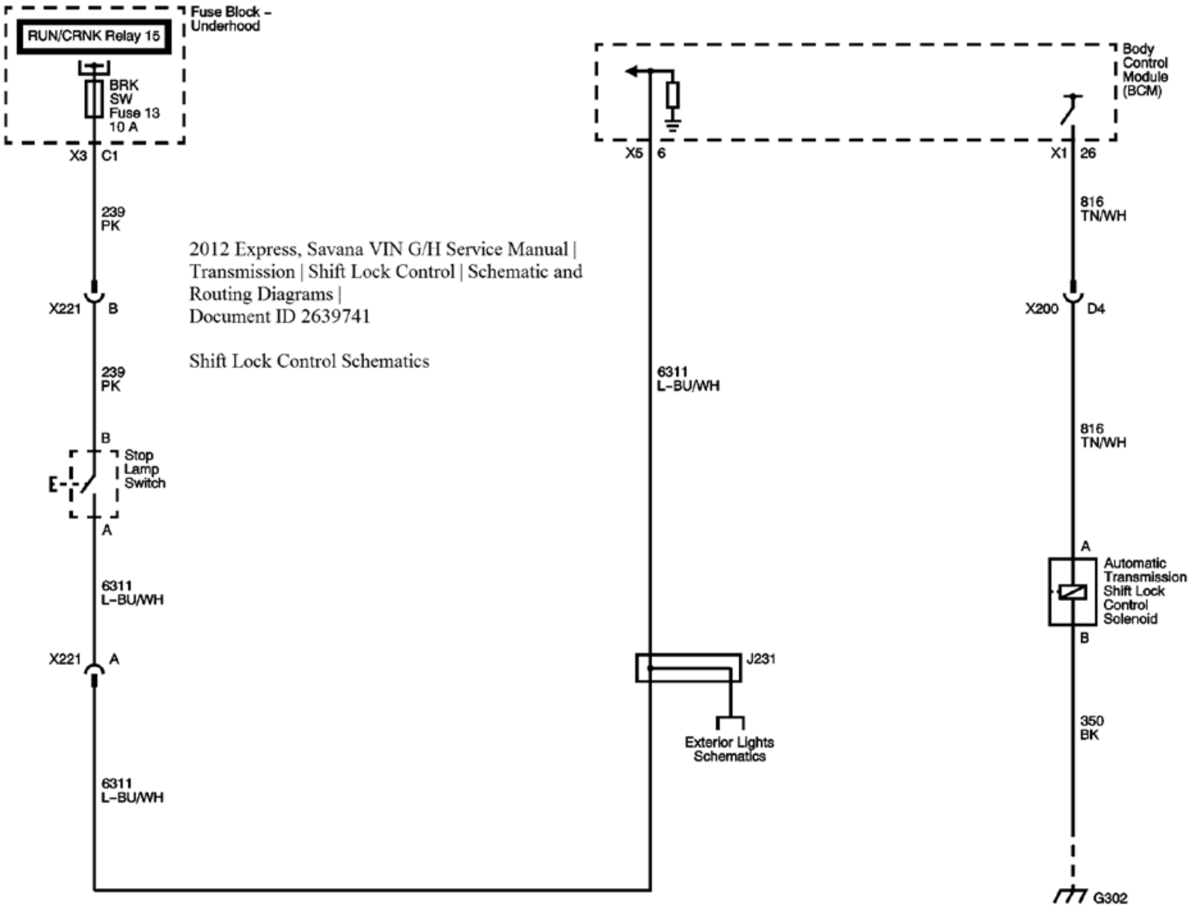
(4) Vacuum Pump

(5) A/C Low Pressure Switch (C60)

(6) X142

Remote Vehicle Immobilizer

For applications where it is desirable to leave the vehicle running but assure that it can not be moved an external +12 v signal can be supplied to the shift interlock solenoid assuring the vehicle will remain in park – see schematic and location drawings. Best access is a the steering column connector X-200 cavity D4 tan white 816 wire.


Fuse Block – Underhood
RUN/CRNK Relay 15
BRK SW Fuse 13 10 A
X3 C1
239 PK
X221 B
239 PK
B
Stop Lamp Switch
E
A
6311 L-BU/WH
X221 A
6311 L-BU/WH
Body Control Module (BCM)
X5 6
6311 L-BU/WH
J231
Exterior Lights Schematics
X1 26
816 TN/WH
X200 D4
816 TN/WH
A
Automatic Transmission Shift Lock Control Solenoid
B
350 BK
G302

2012 Express, Savana VIN G/H Service Manual | Transmission | Shift Lock Control | Schematic and Routing Diagrams | Document ID 2639741

Shift Lock Control Schematics

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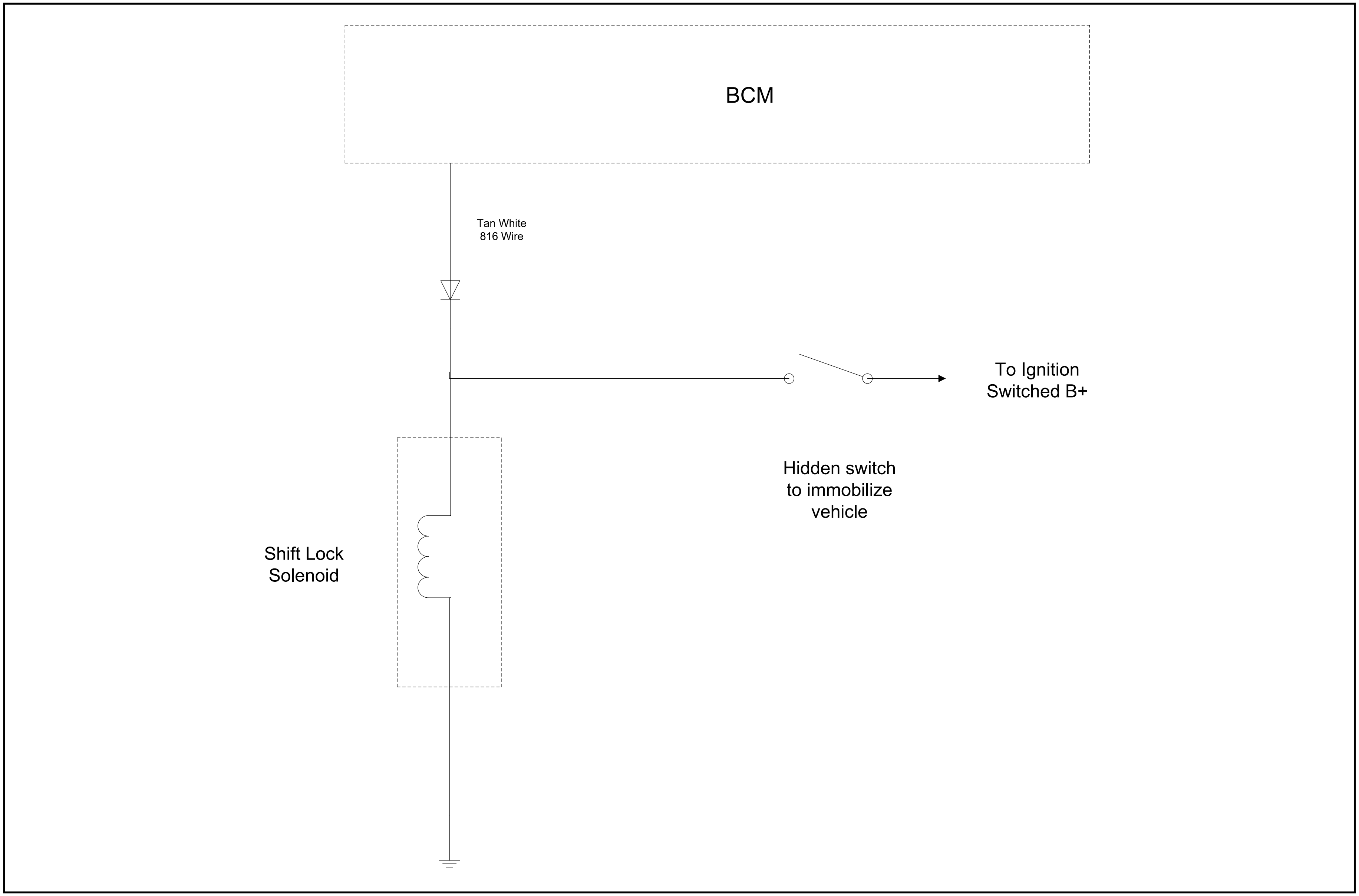
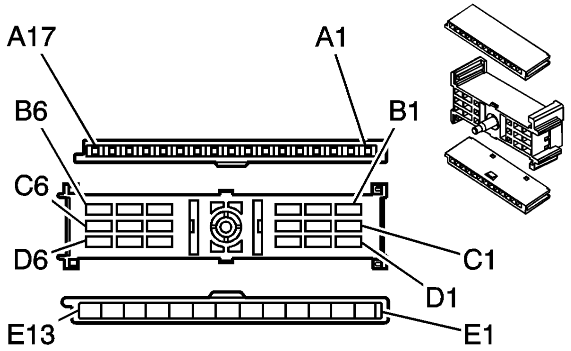
Remote Vehicle Immobilizer, cont'd.


BCM
Tan White
816 Wire
To Ignition
Switched B+
Hidden switch
to immobilize
vehicle
Shift Lock
Solenoid

X200 Steering Column Harness to Instrument Panel Harness

Connector Part Information



Harness Type: Steering Column

OEM Connector: 12047842

Service Connector: 12047842

Description: 17-Way F Metri-Pack 280 Series (BK)

OEM Connector: 15492581

Service Connector: 12084183

Description: 18-Way F Metri-Pack 280 630 Series Unsealed (BK)

OEM Connector: 12047840

Service Connector: 12047840

Description: 13-Way F Metri-Pack 280 Series (BK

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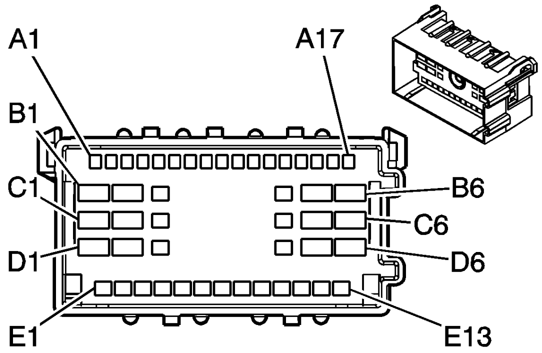
Connector Part Information



Harness Type: Instrument Panel

OEM Connector: 15492579

Service Connector: 88988982

Description: 48-Way M Metri-Pack 150 280 630 Series (BK)

Terminal Part Information

Pins: A1, A3, A6, A9, A11-A17

Terminated Lead: 13575462

Release Tool: J-38125-12A

Diagnostic Test Probe: J-35616-3 (GY)

Terminal/Tray: 12047581/2

Core/Insulation Crimp: E/C

Pins: B3, C3, D3, D4, E1, E3, E4, E8, E9, E10-E13

Terminated Lead: 13575463

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X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column, *cont'd.*

Terminal Part Information

Pins: A1, A3, A6, A9, A11-A17
Terminated Lead: 13575464
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-14 (GN)
Terminal/Tray: 15326030/5
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5-D6
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-42 (RD)
Terminal/Tray: 12015869/3
Core/Insulation Crimp: E/A

Pins: B3, C3, D3-D4, E1, E3-E4, E8-E13
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 12034046/2
Core/Insulation Crimp: E/A

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Terminal Part Information: Instrument Panel, *cont'd.*

Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 12047581/2
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5, D6
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-43 (RD)
Terminal/Tray: 12020126/2
Core/Insulation Crimp: E/A

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column, *cont'd.*

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.35 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.35 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.35 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage

(continued on next page)

Harness: Instrument Panel, *cont'd.*

Pin	Wire	Circuit	Function
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.5 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.5 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.5 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal
B4-B5	--	--	Not Used
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal
C4-C5	--	--	Not Used

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column, *cont'd.*

Pin	Wire	Circuit	Function
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal
B4-B5	--	--	Not Used
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal
C4-C5	--	--	Not Used
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.35 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground

(continued on next page)

Harness: Instrument Panel, *cont'd.*

Pin	Wire	Circuit	Function
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.5 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.5 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.5 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column, *cont'd.*

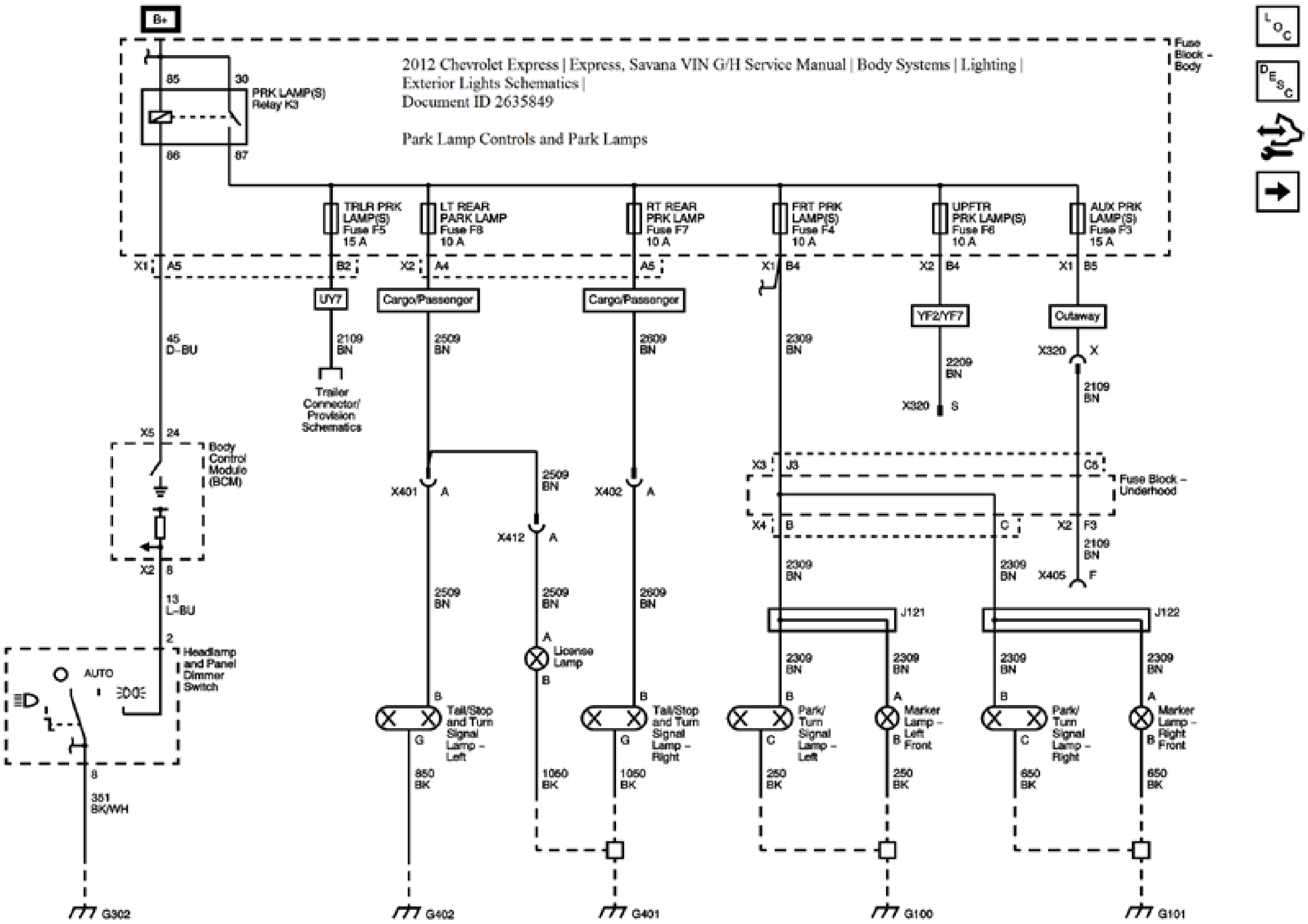
Pin	Wire	Circuit	Function
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.35 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.35 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

Harness: Instrument Panel, *cont'd.*

Pin	Wire	Circuit	Function
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

Separated Stop/Turn

Separated stop and turn signals [at the rear lighting connector X405] are standard on all cutaway models. Option V4D provides both separated signals and LED compatibility [no fast flash for bulb outage detection] on the rear signal lamps.


B+
2012 Chevrolet Express | Express, Savana VIN G/H Service Manual | Body Systems | Lighting | Exterior Lights Schematics | Document ID 2635849
Park Lamp Controls and Park Lamps
Fuse Block – Body
85
30
PRK LAMP(S) Relay K3
86
87
TRLR PRK LAMP(S) Fuse F5 15 A
LT REAR PARK LAMP Fuse F8 10 A
RT REAR PRK LAMP Fuse F7 10 A
FRT PRK LAMP(S) Fuse F4 10 A
UPFTR PRK LAMP(S) Fuse F6 10 A
AUX PRK LAMP(S) Fuse F3 15 A
X1 A5
B2
X2 A4
A5
X1 B4
X2 B4
X1 B5
UY7
Cargo/Passenger
Cargo/Passenger
YF2/YF7
Cutaway
45 D-BU
2109 BN
Trailer Connector/ Provision Schematics
2509 BN
2609 BN
2309 BN
2209 BN
X320 S
X320 X
2109 BN
X5 24
Body Control Module (BCM)
X2 8
13 L-BU
2
Headlamp and Panel Dimmer Switch
AUTO
8
351 BK/WH
X401 A
2509 BN
X412 A
X402 A
X3 J3
C5
Fuse Block – Underhood
X4 B
C
X2 F3
2109 BN
X405 F
2309 BN
2309 BN
J121
J122
License Lamp
A
B
Tail/Stop and Turn Signal Lamp – Left
Tail/Stop and Turn Signal Lamp – Right
Park/ Turn Signal Lamp – Left
Marker Lamp – Left Front
Park/ Turn Signal Lamp – Right
Marker Lamp – Right Front
G
C
850 BK
1050 BK
1050 BK
250 BK
250 BK
650 BK
650 BK
G302
G402
G401
G100
G101

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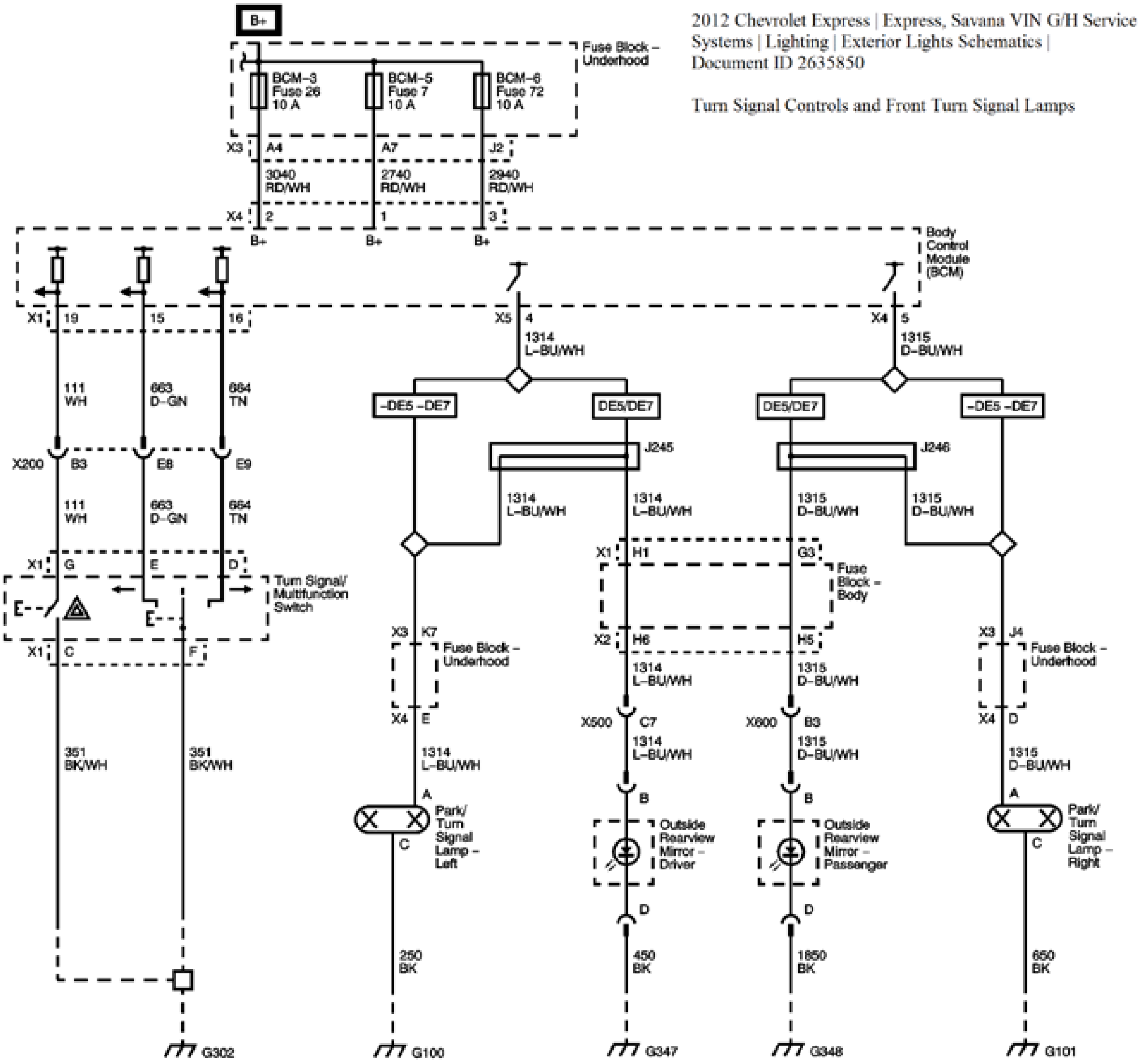
Separated Stop/Turn, cont'd.


B+
Fuse Block – Underhood
BCM–3 Fuse 26 10 A
BCM–5 Fuse 7 10 A
BCM–6 Fuse 72 10 A
X3 A4 A7 J2
3040 RD/WH
2740 RD/WH
2940 RD/WH
X4 2 1 3
B+ B+ B+
Body Control Module (BCM)
X1 19 15 16
X5 4
X4 5
1314 L–BU/WH
1315 D–BU/WH
111 WH
663 D–GN
664 TN
–DE5 –DE7
DE5/DE7
DE5/DE7
–DE5 –DE7
J245
J246
X200 B3 E8 E9
111 WH
663 D–GN
664 TN
1314 L–BU/WH
1314 L–BU/WH
1315 D–BU/WH
1315 D–BU/WH
X1 G E D
Turn Signal/ Multifunction Switch
X1 C F
X1 H1 G3
Fuse Block – Body
X2 H6 H5
X3 K7
Fuse Block – Underhood
X4 E
X3 J4
Fuse Block – Underhood
X4 D
1314 L–BU/WH
1315 D–BU/WH
X500 C7
X600 B3
1314 L–BU/WH
1315 D–BU/WH
1314 L–BU/WH
1315 D–BU/WH
351 BK/WH
351 BK/WH
A
Park/ Turn Signal Lamp – Left
C
B
Outside Rearview Mirror – Driver
D
B
Outside Rearview Mirror – Passenger
D
A
Park/ Turn Signal Lamp – Right
C
250 BK
450 BK
1850 BK
650 BK
G302
G100
G347
G348
G101

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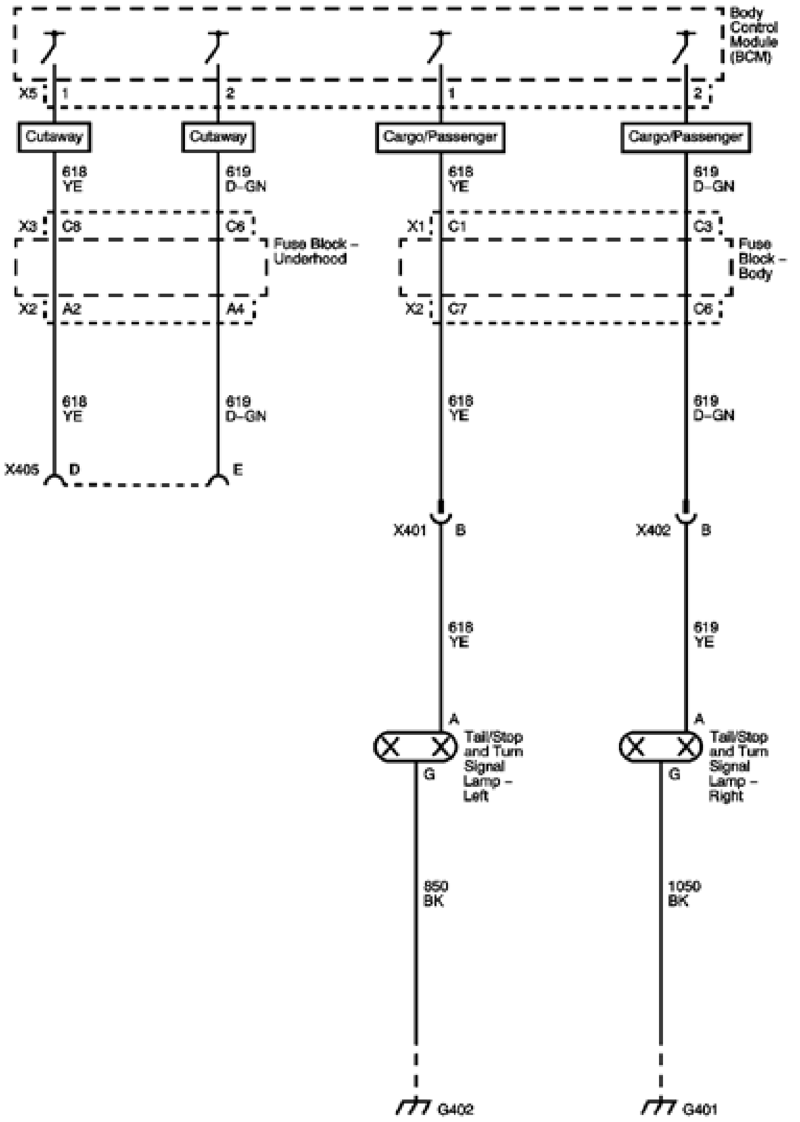
Turn Signal Controls and Front Turn Signal Lamps

(continued on next page)

Separated Stop/Turn, cont'd.

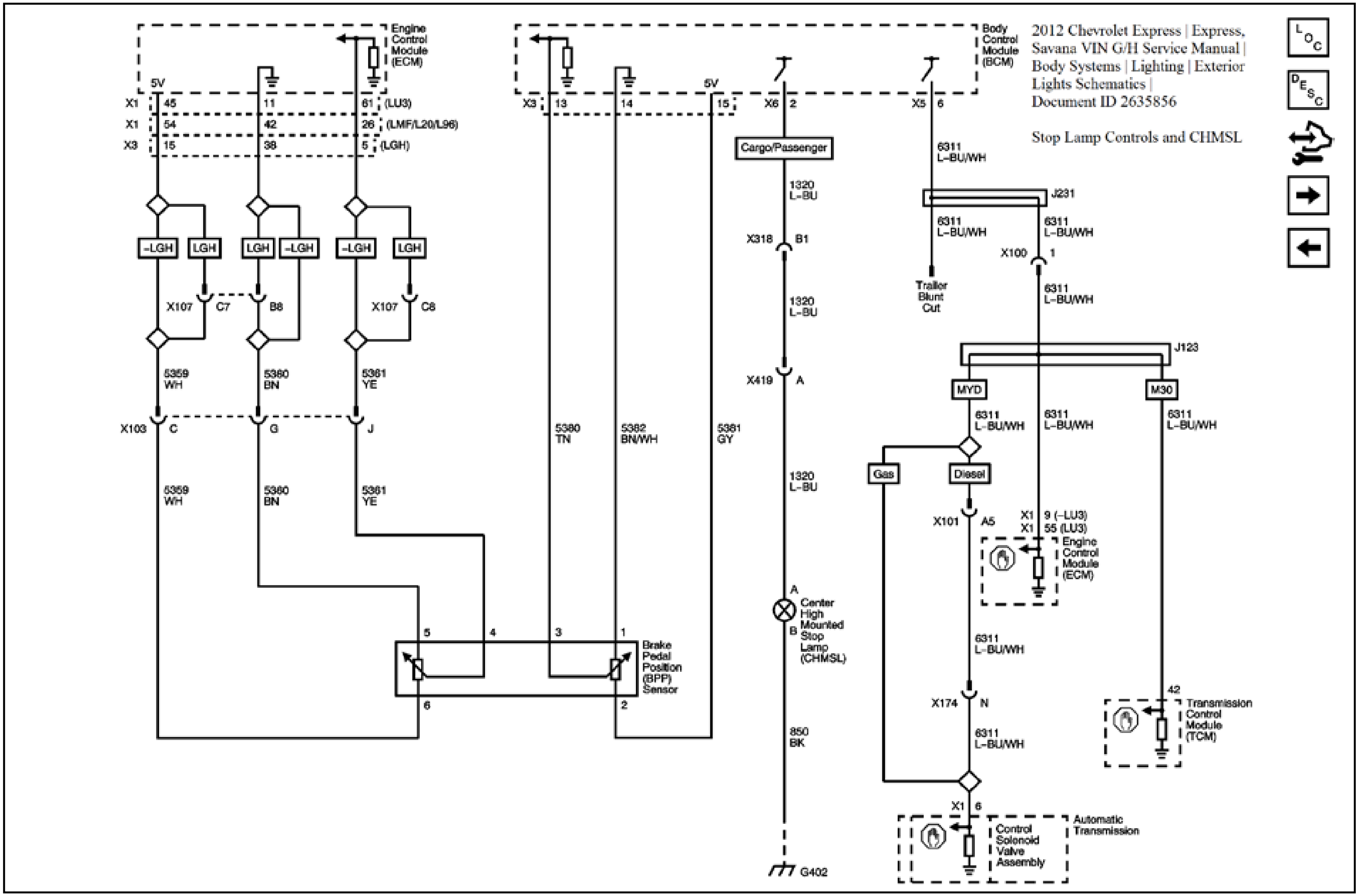
2012 Chevrolet Express | Express, Savana
VIN G/H Service Manual | Body Systems |
Lighting | Exterior Lights Schematics |
Document ID 2635855

Rear Turn Signal Lamps


Body Control Module (BCM)
X5
1
2
1
2
Cutaway
Cutaway
Cargo/Passenger
Cargo/Passenger
618 YE
619 D-GN
618 YE
619 D-GN
X3
C8
C6
Fuse Block – Underhood
X1
C1
C3
Fuse Block – Body
X2
A2
A4
X2
C7
C6
618 YE
619 D-GN
618 YE
619 D-GN
X405
D
E
X401
B
X402
B
618 YE
619 YE
A
Tail/Stop and Turn Signal Lamp – Left
G
A
Tail/Stop and Turn Signal Lamp – Right
G
850 BK
1050 BK
G402
G401

(continued on next page)

Separated Stop/Turn, cont'd.


Engine Control Module (ECM)
5V
X1 45 11 61 (LU3)
X1 54 42 26 (LMF/L20/L96)
X3 15 38 5 (LGH)
–LGH
LGH
LGH
–LGH
–LGH
LGH
X107 C7
B8
X107 C8
5359 WH
5360 BN
5361 YE
X103 C
G
J
5359 WH
5360 BN
5361 YE
5
4
3
1
6
2
Brake Pedal Position (BPP) Sensor
Body Control Module (BCM)
X3 13
14
5V
15
5380 TN
5382 BN/WH
5381 GY
X6 2
X5 6
Cargo/Passenger
1320 L-BU
X318 B1
1320 L-BU
X419 A
1320 L-BU
A
Center High Mounted Stop Lamp (CHMSL)
B
850 BK
G402
6311 L-BU/WH
J231
6311 L-BU/WH
6311 L-BU/WH
X100 1
Trailer Blunt Cut
6311 L-BU/WH
J123
MYD
M30
6311 L-BU/WH
6311 L-BU/WH
6311 L-BU/WH
Gas
Diesel
X101 A5
X1 9 (–LU3)
X1 55 (LU3)
Engine Control Module (ECM)
6311 L-BU/WH
X174 N
6311 L-BU/WH
42
Transmission Control Module (TCM)
X1 6
Control Solenoid Valve Assembly
Automatic Transmission

2012 Chevrolet Express | Express, Savana VIN G/H Service Manual | Body Systems | Lighting | Exterior Lights Schematics | Document ID 2635856

Stop Lamp Controls and CHMSL

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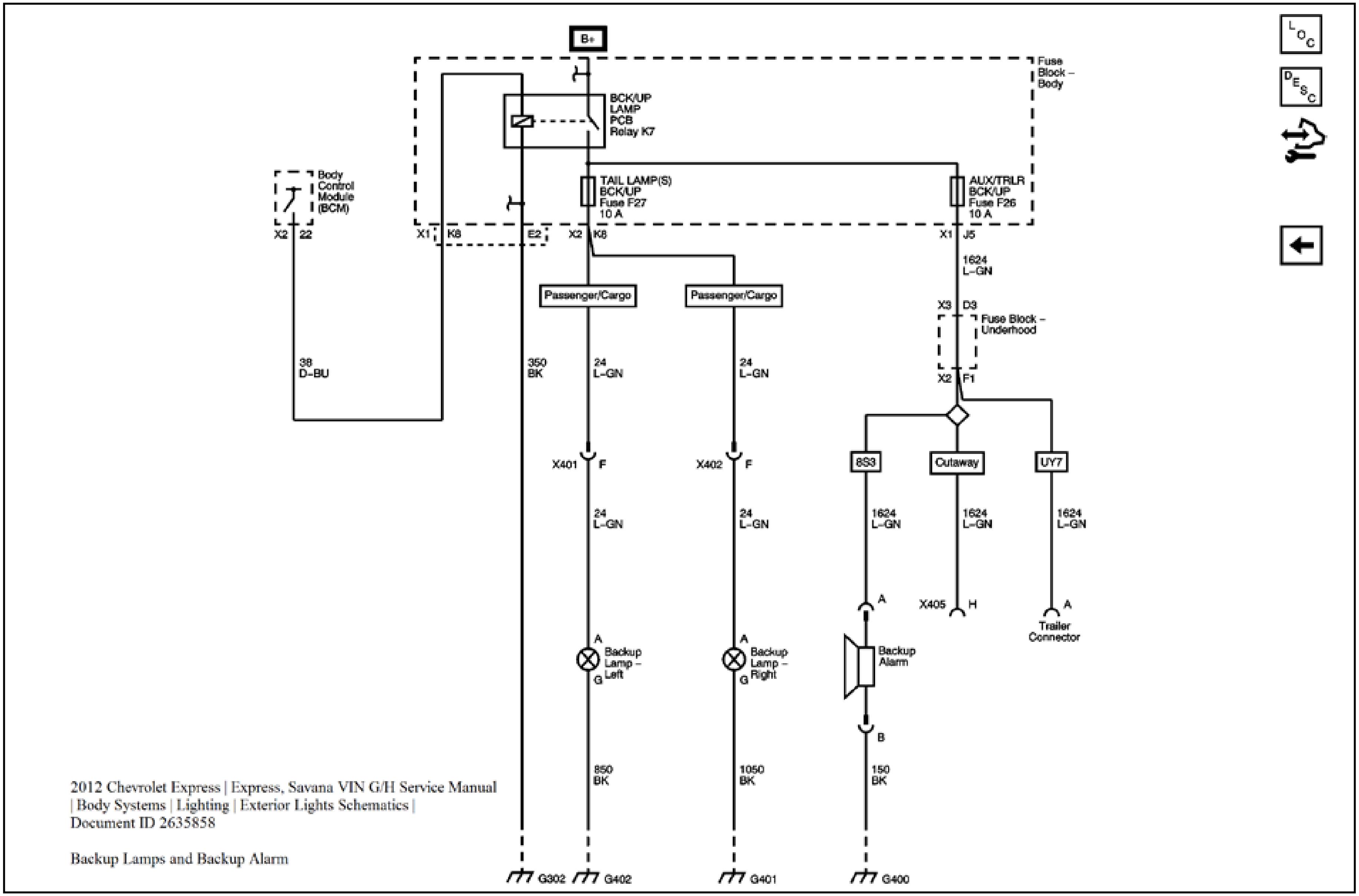
Separated Stop/Turn, cont'd.


B+
Fuse Block – Body
BCK/UP LAMP PCB Relay K7
Body Control Module (BCM)
TAIL LAMP(S) BCK/UP Fuse F27 10 A
AUX/TRLR BCK/UP Fuse F26 10 A
X2 22
X1 K8
E2
X2 K8
X1 J5
1624 L-GN
Passenger/Cargo
Passenger/Cargo
X3 D3
Fuse Block – Underhood
X2 F1
38 D-BU
350 BK
24 L-GN
24 L-GN
X401 F
X402 F
8S3
Outaway
UY7
24 L-GN
24 L-GN
1624 L-GN
1624 L-GN
1624 L-GN
A
X405 H
A
Trailer Connector
A
Backup Lamp – Left
G
A
Backup Lamp – Right
G
Backup Alarm
B
850 BK
1050 BK
150 BK
G302
G402
G401
G400

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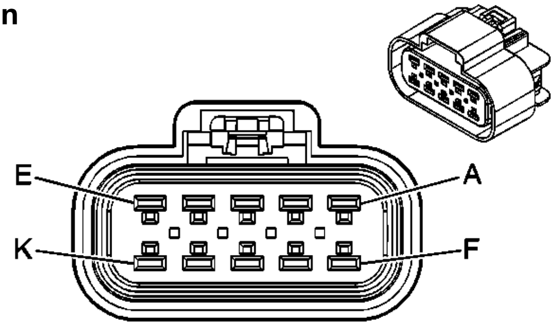
Backup Lamps and Backup Alarm

X405 Cutaway Rear Lighting Connector to Chassis Harness (Cutaway)

Connector Part Information



Harness Type: Cutaway Rear Lighting Connector

OEM Connector: 15326660

Service Connector: 88986262

Description: 10-Way F GT 280 5.8 Series, Sealed (BK)

Terminal Part Information

Terminated Lead: 13575405

Release Tool: J-38125-553

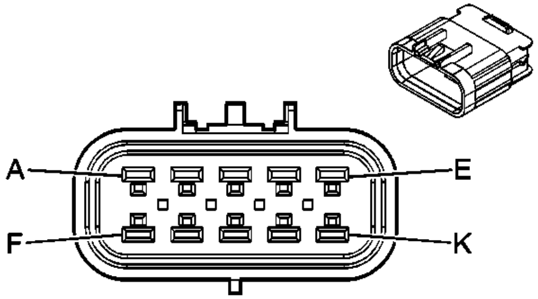
Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: 15304719/19

Core/Insulation Crimp: 2/5

(continued on next page)

Connector Part Information



Harness Type: Chassis

OEM Connector: 15326661

Service Connector: 88986245

Description: 10-Way M GT 280 5.8 Series, Sealed (BK)

Terminal Part Information

Terminated Lead: 13327135

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-5 (PU)

Terminal/Tray: 15304731/19

Core/Insulation Crimp: Pins: C-H - 2/5

Core/Insulation Crimp: Pin K - C/5

(continued on next page)

X405 Cutaway Rear Lighting Connector to Chassis Harness (Cutaway), cont'd.

Harness: Cutaway Rear Lighting Connector, *cont'd.*

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 WH	17	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

Harness: Chassis, *cont'd.*

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 L-BU	1320	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

Park Neutral Signal

Park Neutral can be monitored in two ways.

1. The preferred method is to monitor the 816 tan white wire from the BCM which drives the shift lock solenoid. This signal goes to B+ when the ignition is ON and the vehicle is in Park. The BCM will drop power to this line when the brake is depressed. The 816 wire is in cavity D4 of X200.
2. When method 1 won't work there is a park/neutral switch in the transmission which supplies a ground signal directly to the engine controller. This is the 1786 orange black wire in the ECM connector [see ECM connector pin charts for specific pins based on engine type] which held low during park and neutral gear selections.

CAUTION: The PN switch or internal mode switch is very low current – intended to interface to a logic gate. You may NOT use it to close a relay unless the relay is very small with a coil current of less than 100 ma. It is best to detect this signal with a solid state gate which will have very small current draw. If you draw too much current from this circuit you will damage the switch and end up with a check engine light.

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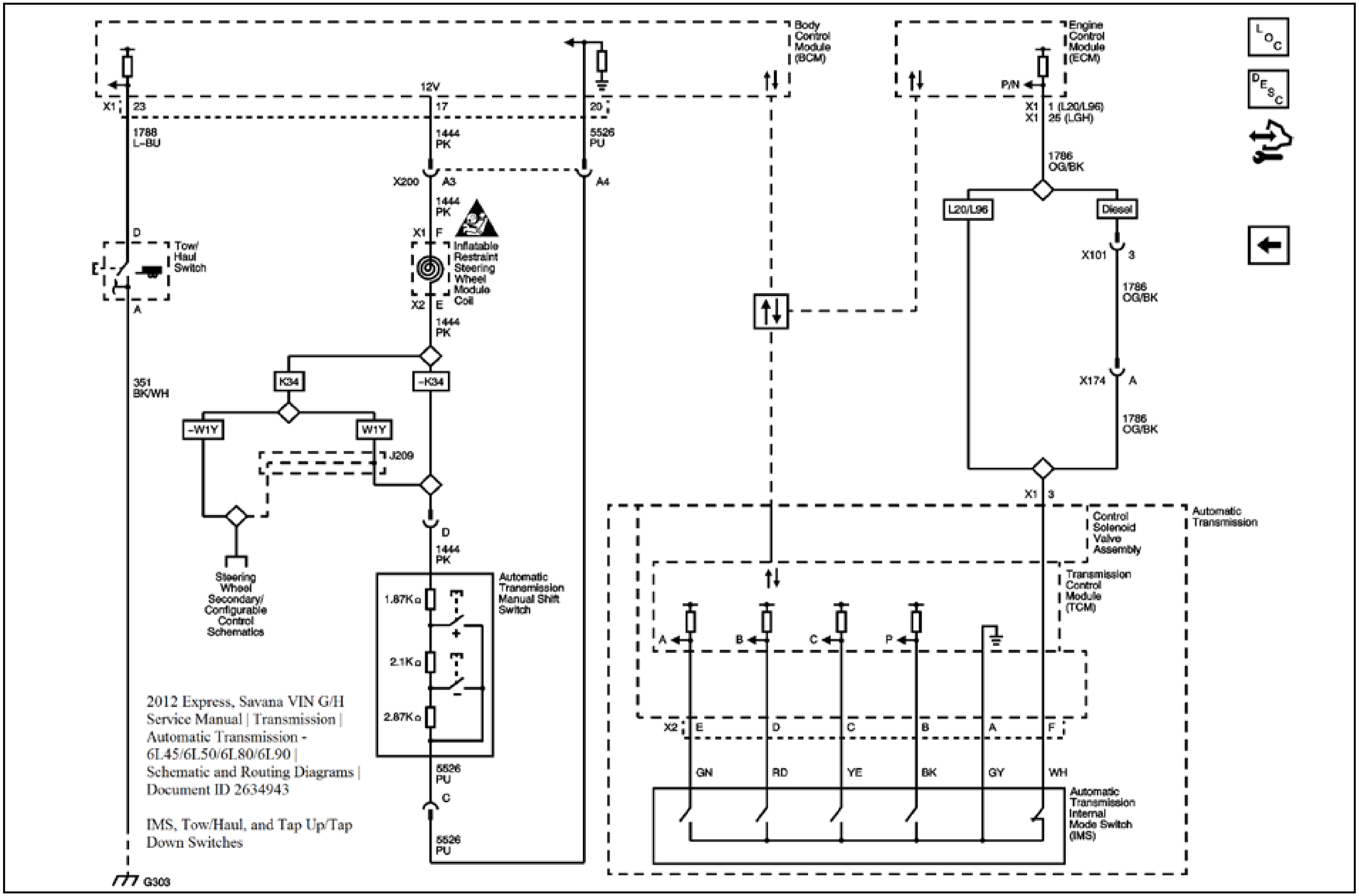
Park Neutral Signal, cont'd.


Body Control Module (BCM)
X1
23
12V
17
20
1788 L-BU
1444 PK
5526 PU
X200
A3
A4
1444 PK
D
Tow/ Haul Switch
A
X1
F
Inflatable Restraint Steering Wheel Module Coil
X2
E
1444 PK
351 BK/WH
K34
-K34
-W1Y
W1Y
J209
Steering Wheel Secondary/ Configurable Control Schematics
D
1444 PK
1.87KΩ
2.1KΩ
2.87KΩ
+
-
Automatic Transmission Manual Shift Switch
5526 PU
C
5526 PU
G303
Engine Control Module (ECM)
P/N
X1 1 (L20/L96)
X1 25 (LGH)
1786 OG/BK
L20/L96
Diesel
X101
3
1786 OG/BK
X174
A
1786 OG/BK
X1
3
Control Solenoid Valve Assembly
Automatic Transmission
Transmission Control Module (TCM)
A
B
C
P
X2
E
D
C
B
A
F
GN
RD
YE
BK
GY
WH
Automatic Transmission Internal Mode Switch (IMS)

2012 Express, Savana VIN G/H Service Manual | Transmission | Automatic Transmission - 6L45/6L50/6L80/6L90 | Schematic and Routing Diagrams | Document ID 2634943

IMS, Tow/Haul, and Tap Up/Tap Down Switches

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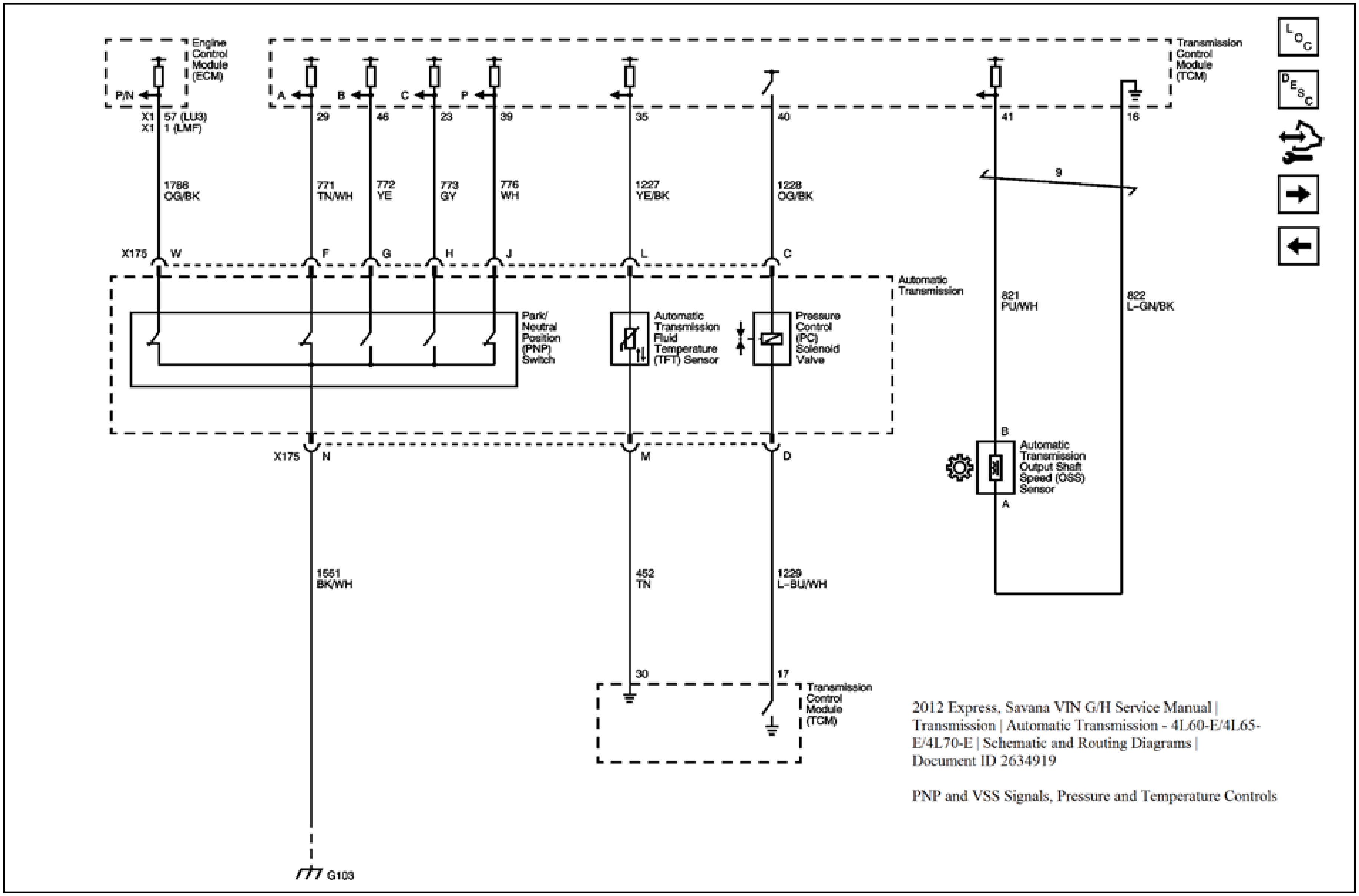
Park Neutral Signal, cont'd.


Engine Control Module (ECM)
P/N
X1 57 (LU3)
X1 1 (LMF)
1786 OG/BK
Transmission Control Module (TCM)
A
B
C
P
29
46
23
39
35
40
41
16
771 TN/WH
772 YE
773 GY
776 WH
1227 YE/BK
1228 OG/BK
9
X175
W
F
G
H
J
L
C
Automatic Transmission
Park/ Neutral Position (PNP) Switch
Automatic Transmission Fluid Temperature (TFT) Sensor
Pressure Control (PC) Solenoid Valve
821 PU/WH
822 L–GN/BK
B
Automatic Transmission Output Shaft Speed (OSS) Sensor
A
X175
N
M
D
1551 BK/WH
452 TN
1229 L–BU/WH
30
17
Transmission Control Module (TCM)
G103
LOC
DESC

2012 Express, Savana VIN G/H Service Manual | Transmission | Automatic Transmission - 4L60-E/4L65-E/4L70-E | Schematic and Routing Diagrams | Document ID 2634919

PNP and VSS Signals, Pressure and Temperature Controls

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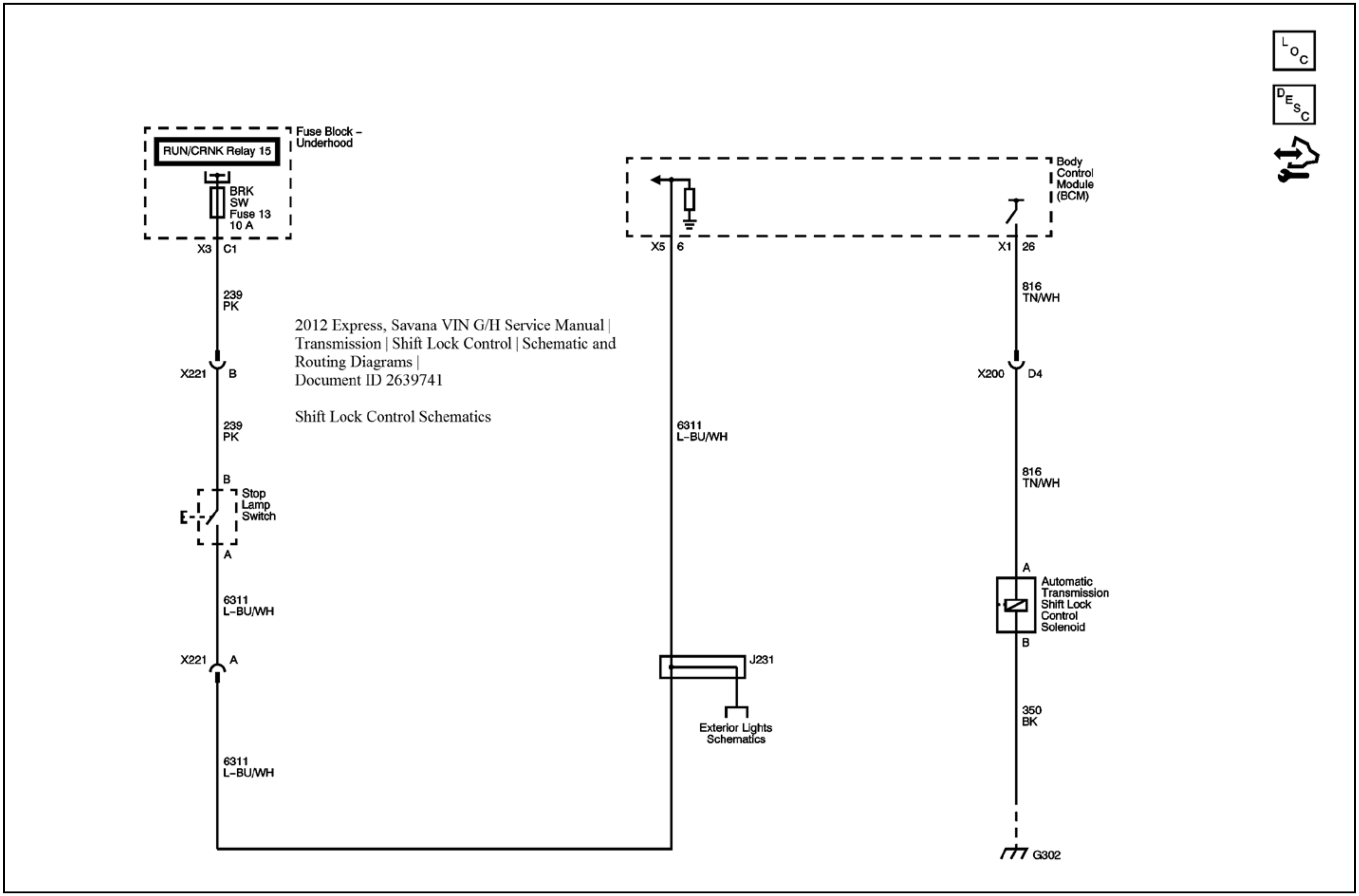
Park Neutral Signal, cont'd.



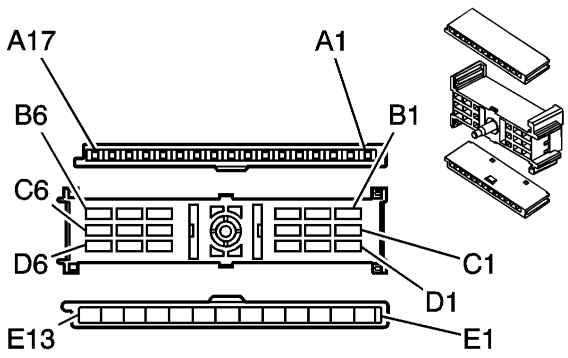
Fuse Block – Underhood
RUN/CRNK Relay 15
BRK SW Fuse 13 10 A
X3
C1
239 PK
X221
B
239 PK
B
Stop Lamp Switch
A
6311 L–BU/WH
X221
A
6311 L–BU/WH
Body Control Module (BCM)
X5
6
6311 L–BU/WH
J231
Exterior Lights Schematics
X1
26
816 TN/WH
X200
D4
816 TN/WH
A
Automatic Transmission Shift Lock Control Solenoid
B
350 BK
G302

2012 Express, Savana VIN G/H Service Manual |
Transmission | Shift Lock Control | Schematic and
Routing Diagrams |
Document ID 2639741

Shift Lock Control Schematics

X200 Steering Column Harness to Instrument Panel Harness

Connector Part Information



Harness Type: Steering Column

OEM Connector: 12047842

Service Connector: 12047842

Description: 17-Way F Metri-Pack 280 Series (BK)

OEM Connector: 15492581

Service Connector: 12084183

Description: 18-Way F Metri-Pack 280 630 Series Unsealed (BK)

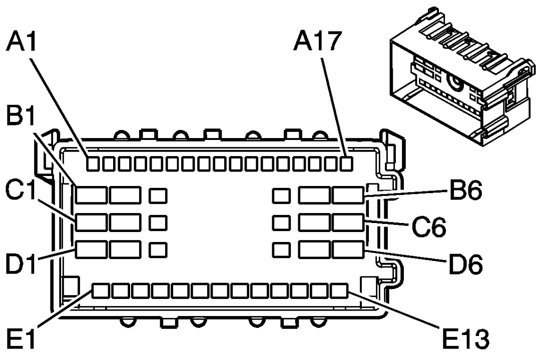
OEM Connector: 12047840

Service Connector: 12047840

Description: 13-Way F Metri-Pack 280 Series (BK)

(continued on next page)

Connector Part Information



Harness Type: Instrument Panel

OEM Connector: 15492579

Service Connector: 88988982

Description: 48-Way M Metri-Pack 150 280 630 Series (BK)

Terminal Part Information

Pins: A1, A3, A6, A9, A11-A17

Terminated Lead: 13575462

Release Tool: J-38125-12A

Diagnostic Test Probe: J-35616-3 (GY)

Terminal/Tray: 12047581/2

Core/Insulation Crimp: E/C

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column *cont'd.*

Terminal Part Information

Pins: A1, A3, A6, A9, A11-A17
Terminated Lead: 13575464
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-14 (GN)
Terminal/Tray: 15326030/5
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5-D6
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-42 (RD)
Terminal/Tray: 12015869/3
Core/Insulation Crimp: E/A

Pins: B3, C3, D3-D4, E1, E3-E4, E8-E13
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 12034046/2
Core/Insulation Crimp: E/A

(continued on next page)

Terminal Part Information: Instrument Panel, *cont'd.*

Pins: B3, C3, D3, D4, E1, E3, E4, E8, E9, E10-E13
Terminated Lead: 13575463
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 12047581/2
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5, D6
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-43 (RD)
Terminal/Tray: 12020126/2
Core/Insulation Crimp: E/A

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column *cont'd.*

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.35 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.35 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.35 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal

(continued on next page)

Harness: Instrument Panel, *cont'd.*

Pin	Wire	Circuit	Function
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.5 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.5 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.5 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal
B4-B5	--	--	Not Used
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal
C4-C5	--	--	Not Used
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

Harness: Steering Column, *cont'd.*

Pin	Wire	Circuit	Function
B4-B5	--	--	Not Used
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal
C4-C5	--	--	Not Used
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.35 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.35 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal

Harness: Instrument Panel, *cont'd.*

Pin	Wire	Circuit	Function
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.5 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.5 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.5 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness, cont'd.

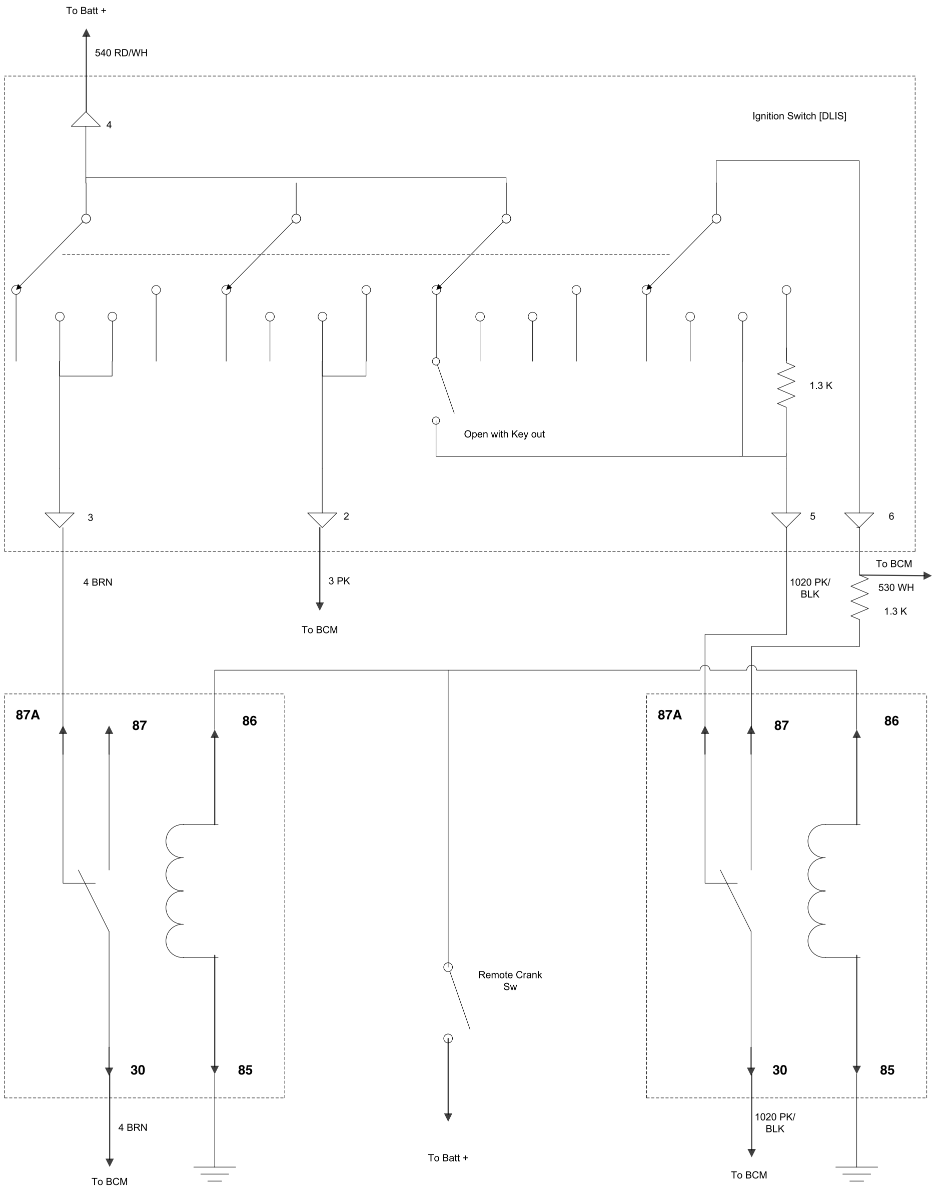
Harness: Steering Column, *cont'd.*

Pin	Wire	Circuit	Function
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.35 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

Remote Start Stop

There is no OEM provision to remotely start and stop this vehicle. The best work around solution is to implement the wiring called out in the drawings GM Truck – CK GH Remote Crank and GM Trucks – CK GH – Engine Kill Sw. This method requires the key to be left in the ignition in the RUN position. If desired an interlock can be installed to immobilize the vehicle while in the remote modes. The schematic for this is in the Immobilizer quick reference.

NOTE: Wire splice for the brown wire must be done close to the DLIS so that both the BCM and TDM circuits are switched.


To Batt +
540 RD/WH
4
Ignition Switch [DLIS]
1.3 K
Open with Key out
3
2
5
6
To BCM
4 BRN
3 PK
To BCM
1020 PK/
BLK
530 WH
1.3 K
87A
87
86
87A
87
86
Remote Crank
Sw
30
85
30
85
4 BRN
To BCM
To Batt +
1020 PK/
BLK
To BCM

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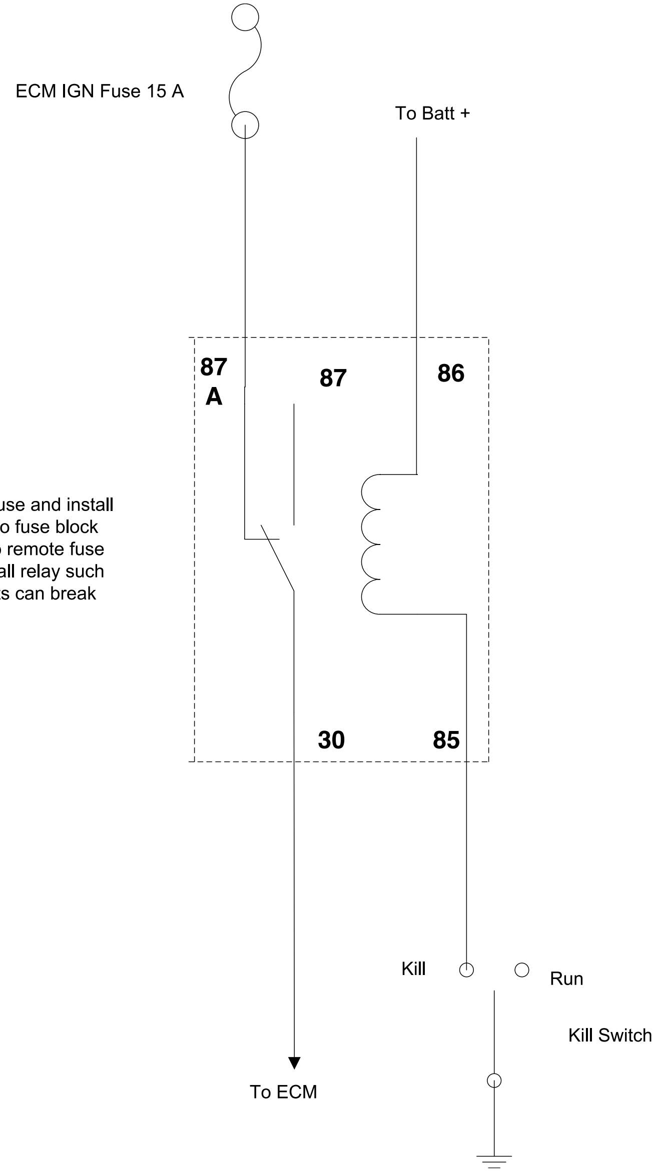
Remote Start Stop, cont'd.


ECM IGN Fuse 15 A
To Batt +
87 A
87
86
30
85
Kill
Run
Kill Switch
To ECM

Note: Pull fuse and install terminals into fuse block with wires to remote fuse holder. Install relay such that contacts can break 'load' side.

Trailer Wiring

If your vehicle does not have the trailer wiring provisions none of the relays and in cab wires will be present. The lamp driver circuits coming out of the Body Control Module BCM are not robust enough to handle the current requirements for a trailer plug. You will need to obtain control signals to operate power relays for each lighting function on your trailer plug. The coils of the power relays will be connected to the subject lamp circuit and ground such that the lamp signal will close the relay and allow the contacts to switch fused battery power to the appropriate trailer connector pin. Automotive rated relays must be used with noise suppression across the coils so noise spikes are not fed back into the OEM system. The rear lighting connector X405 contains all the lighting signals that will be required and the relay grounds may be connected to the cavity G black 150 wire. Your trailer plug ground must go to an appropriate body ground stud and may not be connected to the X405 ground.

If you are adding an aftermarket trailer brake controller to your vehicle you can use the CHMSL signal in X405-C [light blue 1320 wire] as your control signal for brake switch input to the controller. You will need to provide a power feed for the controller and if an ignition control input is required you can get that signal from any of the RUN/Crank fuses [see run/crank schematic] in the underhood fuse relay center.

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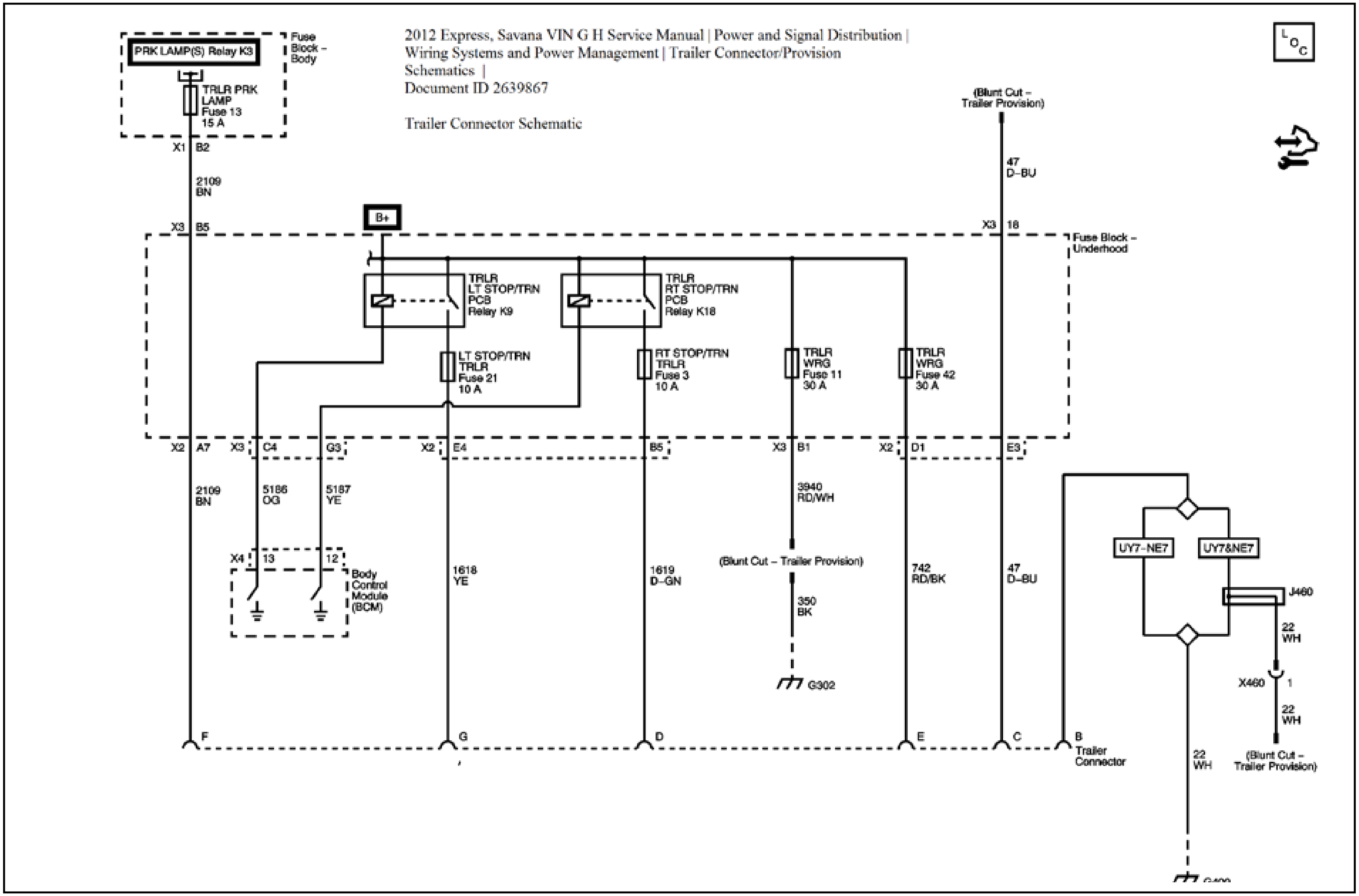
Trailer Wiring, cont'd.



2012 Express, Savana VIN G H Service Manual | Power and Signal Distribution | Wiring Systems and Power Management | Trailer Connector/Provision Schematics |
Document ID 2639867

Trailer Connector Schematic

PRK LAMP(S) Relay K3
Fuse Block – Body
TRLR PRK LAMP Fuse 13 15 A
X1 B2
2109 BN
X3 B5
B+
X3 18
47 D–BU
(Blunt Cut – Trailer Provision)
Fuse Block – Underhood
TRLR LT STOP/TRN PCB Relay K9
TRLR RT STOP/TRN PCB Relay K18
LT STOP/TRN TRLR Fuse 21 10 A
RT STOP/TRN TRLR Fuse 3 10 A
TRLR WRG Fuse 11 30 A
TRLR WRG Fuse 42 30 A
X2 A7
X3 C4
G3
X2 E4
B5
X3 B1
X2 D1
E3
2109 BN
5186 OG
5187 YE
3940 RD/WH
(Blunt Cut – Trailer Provision)
350 BK
G302
X4 13
12
Body Control Module (BCM)
1618 YE
1619 D–GN
742 RD/BK
47 D–BU
UY7–NE7
UY7&NE7
J460
22 WH
X460 1
22 WH
(Blunt Cut – Trailer Provision)
22 WH
F
G
D
E
C
B
Trailer Connector

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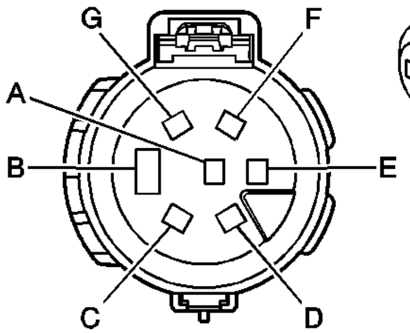
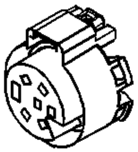
Trailer Wiring, cont'd.

Connector Part Information





Harness Type: Chassis

OEM Connector: 15354653

Service Connector: 15306164

Description: 7-Way F Metri-Pack 280, Sealed (BK)

Terminal Part Information

Pins: A, C-G

Terminated Lead: Pending

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: 12110845/4

Core/Insulation Crimp: Pins: A, D, F, G - Not Available

Core/Insulation Crimp: Pins: C, E - F/5

Pin B

Terminated Lead: Service by Connector Assembly - 15354653

Release Tool: Not Available

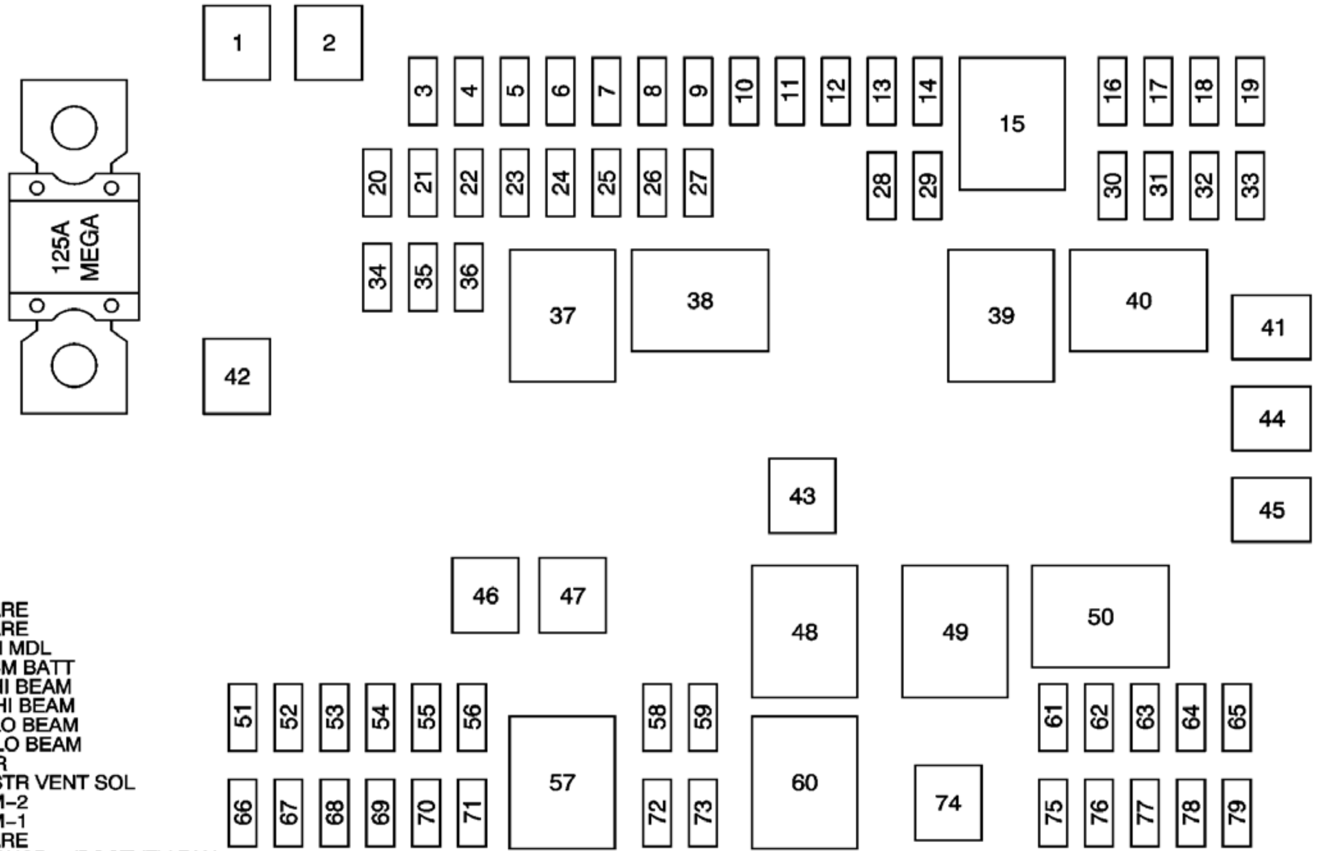
Diagnostic Test Probe: Not Available

Terminal/Tray: Not Available

Core/Insulation Crimp: Not Available

Pin	Wire	Circuit	Function
A	1 L-GN	1624	Trailer Backup Lamps Control
B	8 WH	22	Ground
C	3 D-BU	47	Trailer Auxiliary Control
D	1 D-GN	1619	Trailer Right Rear Turn/Stop Lamp Control
E	3 RD/BK	742	Battery Positive Voltage
F	1 BN	2109	Trailer Park Lamps Control
G	1 YE	1618	Trailer Left Rear Turn/Stop Lamp Control

Fuse Block - Underhood Label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125A MEGA
34
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MINI FUSES

3	15A	RT STOP/TRN TRLR
4	10A	SPARE
5	10A	SPARE
6	10A	FSCM IGN
7	10A	BCM–5
8	10A	BCM–7
9	10A	BCM–4
10	10A	IPC
11	30A	TRLR WRG
12	10A	SPARE
13	10A	BRK SW
14	15A	WASH
16	20A	HORN
17	15A	TRANS
18	15A	A/C CMPRSR
19	10A	ECM BATT
20	10A	SPARE
21	15A	LT STOP/TRN TRLR
22	10A	SPARE
23	15A	SPARE
24	30A	GAS FUEL PUMP
24	20A	DIESEL FUEL PUMP
25	20A	AUX PWR OUTLET
26	10A	BCM–3
27	10A	SEO
28	10A	AIRBAG
29	10A	STR/WHL/SNSR
30	15A	ECM IGN/GLOW PLUG MDL IGN
31	15A	TCM IGN
32	10A	TCM BATT
33	15A	SPARE
34	15A	SPARE
35	15A	FOH MDL
36	20A	FSCM BATT
51	10A	LT HI BEAM
52	10A	RT HI BEAM
53	10A	LT LO BEAM
54	10A	RT LO BEAM
55	25A	WPR
56	10A	CNSTR VENT SOL
58	10A	BCM–2
59	10A	BCM–1
61	15A	SPARE
62	10A	O2 SNSR 2 (POST)/EV FAN
63	10A	FAN CLTCH (EV)
64	15A	MAF/CNSTR VENT
65	20A	ODD IGN/INJ
66	10A	DRL2 (LOLVL–V22)
67	15A	DRL1 (UPLVL+V22)
68	15A	AUX STOP LAMP(S)
69	10A	SPARE
70		
71	15A	FUEL HTR
72	10A	BCM–6
73	20A	LTR/DLC
75	15A	V6 FUEL INJ
76	10A	SPARE
77	10A	O2 SNSR 1 (PRE)/CLS
78	10A	ECM PWR/TRN
79	20A	EVEN IGN/INJ

J–CASE FUSE

1	50A	ABS MTR
2	40A	ABS MDL
41	20A	SPARE
42	30A	TRLR WRG
43	40A	FAN HI
44	40A	STRTR SOL
45	30A	ECM PWR/TRN
46	30A	SPARE
47	40A	FAN LO
74	40A	FRT BLWR

RELAYS

15	MICRO G8V	RUN/CRNK
37	MICRO G8V	SPARE
38	MICRO G8V	FUEL PUMP
39	MICRO G8V	CRNK
40	MICRO G8V	A/C CMPRSR
48	MICRO G8V	FAN HI
49	MICRO G8V	PWR/TRN
50	SOLID STATE	FAN CLTCH (EV)
57	MICRO G8V	FAN LO
60	MICRO G8V	FAN CNTRL

CIRCUIT BOARD RELAY (NOT SHOWN)

K3	WPR HI
K5	HORN/WASH
K6	LO BEAM
K7	HI BEAM
K9	TRLR LT STOP/TRN
K11	STOP LAMP(S)
K13	WPR
K18	TRLR RT STOP/TRN
K19	DRL

Fuse Block Underhood Label Usage

No.	Device	Rating	Description
1	ABS MTR Fuse	50A	Electronic Brake Control Module (EBCM)
2	ABS MDL Fuse	40A	Electronic Brake Control Module (EBCM)
3	RT STOP/TRN TRLR Fuse	15A	Trailer Connector
4	SPARE Fuse	10A	Not Used
5	SPARE Fuse	10A	Not Used
6	FCSM IGN Fuse	10A	Fuel Pump Flow Control Module (LMF)
7	BCM-5 Fuse	10A	Body Control Module
8	BCM-7 Fuse	10A	Body Control Module
9	BCM-4 Fuse	10A	Body Control Module
10	IPC Fuse	10A	Instrument Panel Cluster (IPC)
11	TRLR WRG Fuse	30A	Blunt Cut (UY7)
12	SPARE Fuse	10A	Not Used
13	BRK SW Fuse	10A	Stop Lamp Switch
14	WASH Fuse	15A	Windshield Washer Fluid Pump
15	RUN/CRNK Relay	--	AIRBAG, BRK SW, ECM IGN/GLOW PLUG MDL IGN, FCSM IGN (LMF), IPC, STR/WHL/SNSR (JL4), TCM IGN and TRANS Fuses
16	HORN Fuse	20A	Horn Assembly
17	TRANS Fuse	15A	Automatic Transmission
18	A/C CMPRSR Fuse	15A	A/C Compressor Clutch (C60)
19	ECM BATT Fuse	10A	Engine Control Module (ECM) (L20, LMF or L96)
20	SPARE Fuse	10A	Not Used
21	LT STOP/TRN TRLR Fuse	15A	Trailer Connector
22	SPARE Fuse	10A	Not Used
23	SPARE Fuse	15A	Not Used
No.	Device	Rating	Description
24	FUEL PUMP Fuse	30A	Fuel Pump and Sender Assembly (L20, L96 or LU3)
		20A	Fuel Pump (LGH)
25	AUX PWR OUTLET Fuse	20A	Accessory Power Outlet - Center Console 2
26	BCM-3 Fuse	10A	Body Control Module
27	SEO Fuse	10A	Instrument Panel Cluster (IPC) (8S8)
28	AIRBAG Fuse	10A	Inflatable Restraint I/P Module Disable Switch (C99) or Inflatable Restraint I/P Module Indicator (without C99) and Inflatable Restraint Sensing and Diagnostic Module (SDM)
29	STR/WHL/SNSR Fuse	10A	Steering Wheel Speed/Position Sensor (JL4)
30	ECM IGN/GLOW PLUG MDL IGN Fuse	15A	Engine Control Module (ECM) (LU3, L20, LMF or L96) or Glow Plug Control Module (GPCM) (LMM or LGH)
31	TCM IGN Fuse	15A	Transmission Control Module (TCM)
32	TCM BATT Fuse	10A	Control Solenoid Valve Assembly (MYD) or Transmission Control Module (TCM) (M30)
33	SPARE Fuse	15A	Not Used
34	SPARE Fuse	15A	Not Used
35	FOH MDL Fuse	15A	Coolant Heater (LMM with K08)
36	FCSM BATT Fuse	20A	Fuel Pump Flow Control Module (LMF)
37	SPARE Relay	--	Not Used
38	FUEL PUMP Relay	--	FUEL PUMP Fuse (except LMF)
39	CRNK Relay	--	STRTR SOL Fuse

(continued on next page)

Fuse Block Underhood Label Usage (cont d)

40	A/C CMPRSR Relay	--	A/C CMPRSR Fuse
41	SPARE Fuse	20A	Not Used
No.	**Device**	**Rating**	**Description**
42	TRLR WRG Fuse	30A	Trailer Connector (UY7)
43	FAN HI Fuse	40A	Not Used
44	STRTR SOL Fuse	40A	Starter Motor
45	ECM PWR/ TRN Fuse	30A	Engine Control Module (ECM) (LGH)
46	SPARE Fuse	30A	Not Used
47	FAN LO Fuse	40A	Not Used
48	FAN HI Relay	--	Not Used
49	PWR/TRN Relay	--	ECM PWR/TRN, EVEN IGN/INJ (L20, L96 or LMF), FAN CLTCH (EV) (LGH), FUEL HTR (LGH), MAF/CNSTR VENT, O2 SNSR 1 (PRE)/CLS (L20, L96 or LMF), O2 SNSR 2 (POST) (L20, L96 or LMF), ODD IGN/INJ (L20, L96 or LMF) and V6 FUEL INJ (LU3) Fuses
50	FAN CLTCH (EV) Relay	--	Engine Cooling Fan (LGH)
51	LT HI BEAM Fuse	10A	Headlamp - Left High Beam (Composite) or Headlamp - Left (Sealed)
52	RT HI BEAM Fuse	10A	Headlamp - Right High Beam (Composite) or Headlamp - Right (Sealed)
53	LT LO BEAM Fuse	10A	Headlamp - Left Low Beam (Composite) or Headlamp - Left (Sealed)
54	RT LO BEAM Fuse	10A	Headlamp - Right Low Beam (Composite) or Headlamp - Right (Sealed)
55	WPR Fuse	25A	WPR PCB Relay

56	CNSTR VENT SOL Fuse	10A	Evaporative Emission (EVAP) Canister Vent Solenoid Valve (L20, L96, LMF or LU3)
57	FAN LO Relay	--	Not Used
58	BCM-2 Fuse	10A	Body Control Module
59	BCM-1 Fuse	10A	Body Control Module
No.	**Device**	**Rating**	**Description**
60	FAN CNTRL Relay	--	Not Used
61	SPARE Fuse	15A	Not Used
62	O2 SNSR 2 (POST)/EV FAN Fuse	10A	HO2S Bank 1 Sensor 2 (L20, L96, LMF or LU3) and HO2S Bank 2 Sensor 2 (L20, L96, LMF or LU3)
63	FAN CLTCH (EV) Fuse	10A	FAN CLTCH (EV) Relay (LGH)
64	MAF/CNSTR VENT Fuse	15A	Evaporative Emission (EVAP) Canister Purge Solenoid Valve (L20, L96, LMF or LU3) and Mass Air Flow (MAF)/Intake Air Temperature (IAT) Sensor
65	ODD IGN/INJ Fuse	20A	Ignition Control Module (LU3), Odd Fuel Injectors (L20, L96 or LMF) and Odd Ignition Coils (L20, L96 or LMF)
66	DRL2 (LOLVL-V22) Fuse	10A	Headlamp - Left (Sealed) and LT LO BEAM Fuse
67	DRL1 (UPLVL+V22) Fuse	15A	Headlamp - Left Low Beam (Composite) and LT LO BEAM Fuse
68	AUX STOP LAMP(S) Fuse	15A	X405 (Cutaway)
69	SPARE Fuse	10A	Not Used
70	--	--	Not Used
71	FUEL HTR Fuse	15A	Fuel Heater (LGH)
72	BCM-6 Fuse	10A	Body Control Module

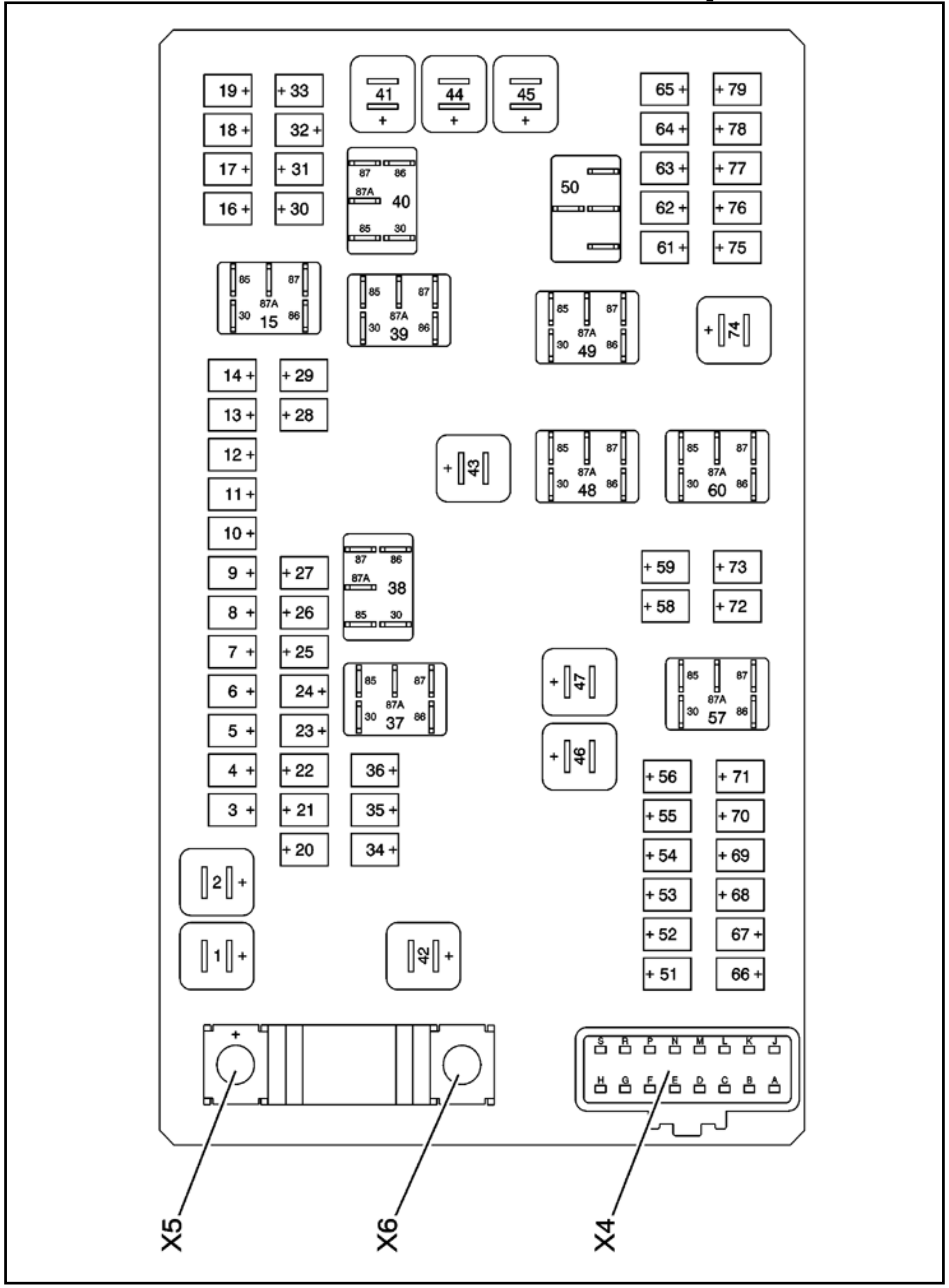
(continued on next page)

Fuse Block Underhood Label Usage (cont d)

73	LTR/DLC Fuse	20A	Accessory Power Outlet - Center Console 1 (without DT4) or Cigar Lighter (DT4) and Data Link Connector (DLC)
74	FRT BLWR Fuse	40A	Blower Motor Resistor
75	V6 FUEL INJ Fuse	15A	Fuel Injectors (LU3)
No.	**Device**	**Rating**	**Description**
76	SPARE Fuse	10A	Not Used
77	O2 SNSR 1 (PRE)/CLS Fuse	10A	HO2S Bank 1 Sensor 1 (L20, L96, LMF or LU3) and HO2S Bank 2 Sensor 1 (L20, L96, LMF or LU3)
78	ECM PWR/ TRN Fuse	10A	Engine Control Module (ECM)
79	EVEN IGN/INJ Fuse	20A	Even Fuel Injector (L20, L96 or LMF) and Even Ignition Coils (L20, L96 or LMF)

Note: Relays listed below are non-serviceable Printed Circuit Board (PCB) relays and are internal to the block.			
K3	WPR HI PCB Relay	--	Windshield Wiper Motor
K5	HORN/WASH PCB Relay	--	HORN and WASH Fuses
K6	LO BEAM PCB Relay	--	LT LO BEAM and RT LO BEAM Fuses
No.	**Device**	**Rating**	**Description**
K7	HI BEAM PCB Relay	--	LT HI BEAM and RT HI BEAM Fuses
K9	TRLR LT STOP/TRN PCB Relay	--	LT STOP/TRN TRLR Fuse (UY7)
K11	STOP LAMP(S) PCB Relay	--	AUX STOP LAMP(S) Fuse

Fuse Block - Underhood Top View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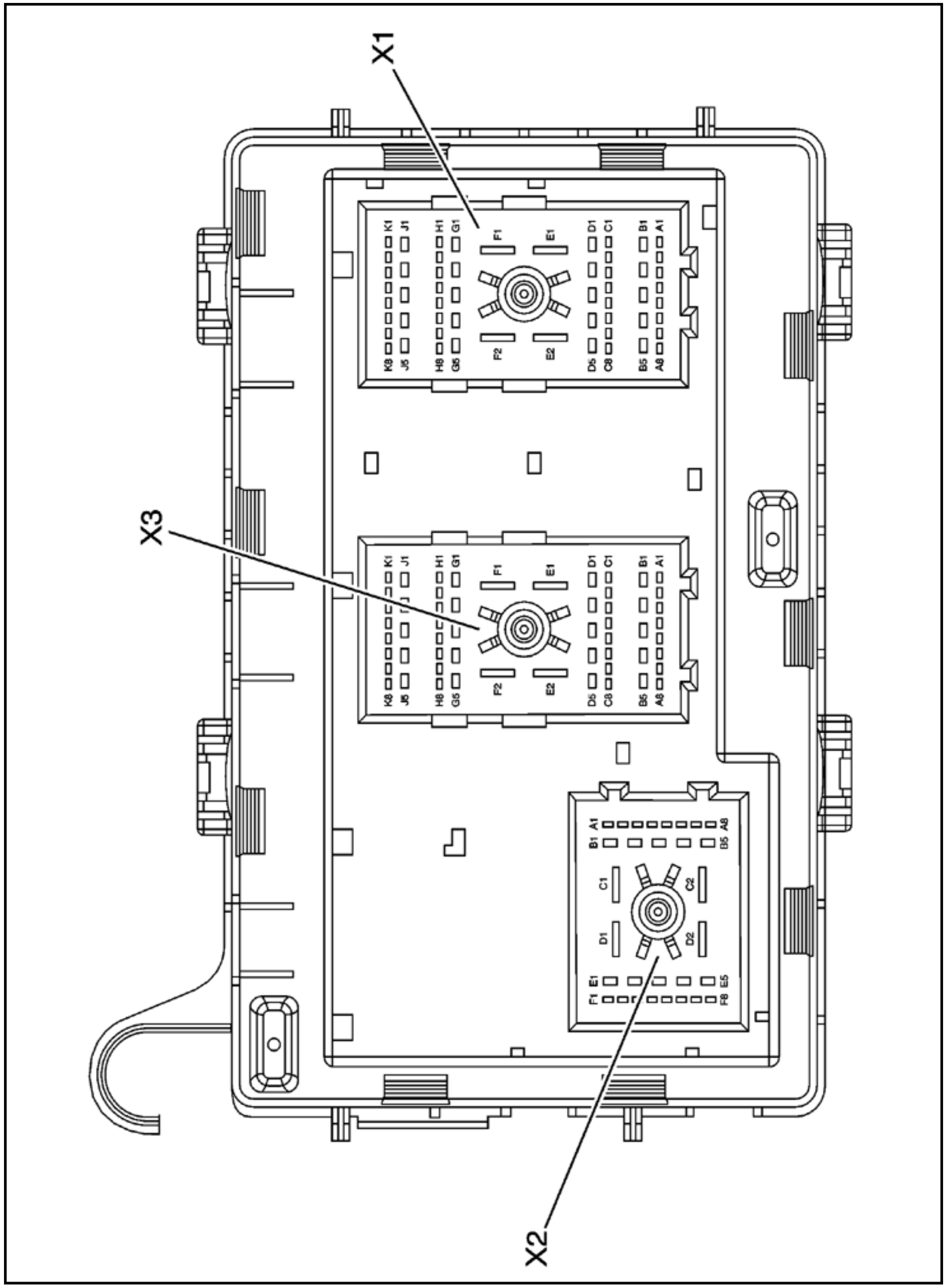
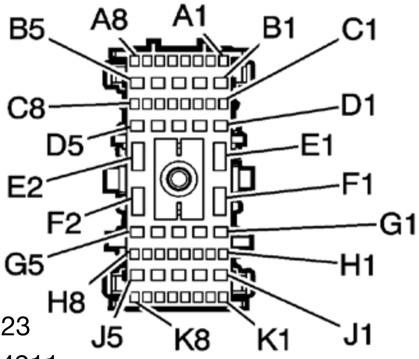
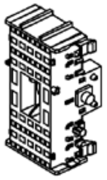
X6
X4

Fuse Block - Underhood Bottom View


X1
X3
X2
K1 J1 H1 G1 F1 E1 D1 C1 B1 A1
K8 J5 H8 G5 F2 E2 D5 C8 B5 A8
A1 A8
B1 B5
C1 C2
D1 D2
E1 E5
F1 F8

Fuse Block - Underhood X1





Connector Part Information

Harness Type: Engine

OEM Connector: 15477823

Service Connector: 13574911

Description: 56-Way F GT 150 280 Metri-Pack Series, (L-GY)

Terminal Part Information

Pins: A1-A2, C2, C6-C8, H2, K1-K2, K4, K8
Terminated Lead: 13575735
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 12191812/19
Core/Insulation Crimp: Pins: A1 (Gas), A2, C2, C6, C8, H1-H2, K2, K8 - E/C
Core/Insulation Crimp: Pins: A1 (Diesel), C7, K1, K4 - C/A

Pins: B2, B4-B5, D2-D3, G1-G5, J1-J4
Terminated Lead: 13575753
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pins: B4, D2, G1-G3, G4 (Gas), J1-J3 - 2/A
Core/Insulation Crimp: Pins: B2, B5, D3, G4 (Diesel), G5, J4 - E/A

Pins: E1, F1, F2
Terminated Lead: 13575718
Release Tool: J-38125-558
Diagnostic Test Probe: J-35616-44 (YE)
Terminal/Tray: 12110127/19
Core/Insulation Crimp: F/G

Pin	Wire	Circuit	Function
A1	0.5 RD/WH	440	Battery Positive Voltage (LU3, L20, LMF or L96)
	1 RD/WH	440	Battery Positive Voltage (LMM or LGH)
A2	0.35 RD/WH	1840	Battery Positive Voltage
A3-A8	--	--	Not Used
B1	--	--	Not Used
B2	0.5 D-GN	59	A/C Compressor Clutch Supply Voltage (C60)
B3	--	--	Not Used
B4	0.8 D-GN	29	Horn Control
B5	0.5 PK	439	Ignition Voltage
	0.5 PK	439	Ignition Voltage (LGH)
C1	--	--	Not Used
C2	0.35 D-GN/ WH	459	A/C Compressor Clutch Relay Control (Gas with C60)
	0.5 D-GN/WH	459	A/C Compressor Clutch Relay Control (Diesel with C60)
C3-C5	--	--	Not Used
C6	0.35 YE/BK	625	Starter Enable Relay Control (LU3, L20, LMF or L96)
	0.5 YE/BK	625	Starter Enable Relay Control (LGH)
C7	1 BK	1250	Ground
C8	0.35 D-GN/ WH	465	Fuel Pump Relay Control - Primary (L20, LMF or L96)
	0.5 D-GN/WH	465	Fuel Pump Relay Control - Primary (LGH)
D1	--	--	Not Used
D2	0.8 PK	3039	Ignition Voltage
D3	0.5 PK	2139	Ignition Voltage

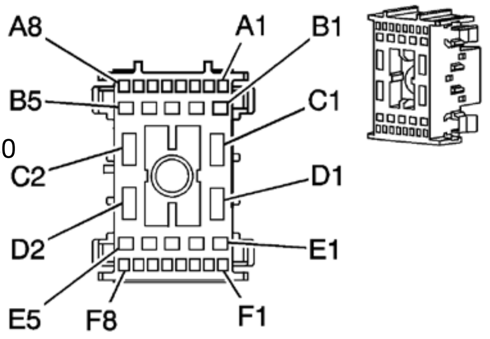
(continued on next page)

Fuse Block Underhood X1 (cont d)

D4-D5	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
E1	5 PU	6	Starter Solenoid Crank Voltage
E2	--	--	Not Used
F1	5 PK	1439	Ignition Voltage (LMM or LGH)
F2	5 RD/BK	542	Battery Positive Voltage
G1	1 PK	1039	Ignition Voltage (L20, LMF or L96)
	0.8 PK	1039	Ignition Voltage (LU3)
G2	0.8 PK	1039	Ignition Voltage (L20, LMF or L96)
	0.8 PK	1039	Ignition Voltage (L20, LMF or L96)
G3	0.8 PK	1039	Ignition Voltage (L20, LMF or L96)
	0.8 PK	1039	Ignition Voltage (L20, LMF or L96)
G4	0.5 PK	1939	Ignition Voltage
G5	0.5 PK	1939	Ignition Voltage (LU3, L20, LMF or L96)
H1	--	--	Not Used
H2	0.5 PK	1339	Ignition Voltage
H3-H8	--	--	Not Used

J1	1 PK	1239	Ignition Voltage (L20, LMF or L96)
Pin	**Wire**	**Circuit**	**Function**
J2	0.8 PK	1239	Ignition Voltage (L20, LMF or L96)
	0.8 PK	1239	Ignition Voltage (L20, LMF or L96)
J3	0.8 PK	1239	Ignition Voltage (L20, LMF or L96)
	0.8 PK	1239	Ignition Voltage (L20, LMF or L96)
J4	0.5 PK	1839	Ignition Voltage (LU3)
J5	--	--	Not Used
K1	0.8 PK	539	Ignition Voltage (LU3, L20, LMF or L96)
	0.8 PK	539	Ignition Voltage (L20, LMF or L96)
	1 PK/BK	5293	Powertrain Relay Control (LGH)
K2	--	--	Not Used
K3	--	--	Not Used
K4	0.8 PK	1539	Ignition Voltage (LU3, L20, LMF or L96)
	0.8 PK	1539	Ignition Voltage (L20, LMF or L96)
	0.5 PK	939	Powertrain Relay Control (LGH)
K5-K7	--	--	Not Used
K8	0.5 YE	5991	Powertrain Relay Control

Fuse Block - Underhood X2



Connector Part Information

Harness Type: Chassis
OEM Connector: 13567518
Service Connector: 19180280
Description: 30-Way F GT 150/280 Metri-Pack 800 Series (BK)

Terminal Part Information

Pins: A2-A4, A7, A8, F1, F3
Terminated Lead: 13575790
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 15496302/5
Core/Insulation Crimp: 2/A

Pins: B2, B5, E2, E4
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 13525970/4
Core/Insulation Crimp: 2/A

Pins: B1, E3
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 13525969/4
Core/Insulation Crimp: F/D

Pins: C2, D1
Terminated Lead: 13575718
Release Tool: J-38125-558
Diagnostic Test Probe: J-35616-44 (YE)
Terminal/Tray: 12110127/19
Core/Insulation Crimp: F/G

Pin: D2
Terminated Lead: 13327105
Release Tool: J-38125-558
Diagnostic Test Probe: J-35616-44 (YE)
Terminal/Tray: 12110127/19
Core/Insulation Crimp: F/G

Pin: F2
Terminated Lead: 13575790
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 15496302/5
Core/Insulation Crimp: E/A

Pin	Wire	Circuit	Function
A1	--	--	Not Used
A2	1 YE	618	Left Rear Turn Signal Lamp Control (Cutaway)
A3	0.8 D-BU/WH	149	Courtesy Lamp Control (Cutaway)
A4	1 D-GN	619	Right Rear Turn Signal Lamp Control (Cutaway)
A5-A6	--	--	Not Used
A7	1 BN	2109	Trailer Park Lamps Control (UY7)
A8	0.5 PK	2739	Ignition Voltage (LMF)
B1	0.8 GY	120	Fuel Pump Control (Diesel)
	2 GY	120	Fuel Pump Control (LU3)
	3 GY	120	Fuel Pump Control (L20 or L96)
B2	0.8 PK	2239	Ignition Voltage (Diesel)
B3	--	--	Not Used
B4	2 RD/WH	1740	Battery Positive Voltage (Diesel with K08)
B5	1 D-GN	1619	Trailer Right Rear Turn/Stop Lamp Control (UY7)
C1	--	--	Not Used

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Fuse Block - Underhood X2 (cont d)

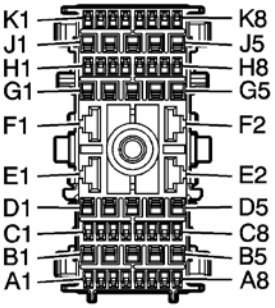
C2	3 RD/WH	1640	Battery Positive Voltage
Pin	**Wire**	**Circuit**	**Function**
D1	3 RD/BK	742	Battery Positive Voltage (UY7)
D2	5 RD/BK	442	Battery Positive Voltage
E1	--	--	Not Used
E2	1 L-BU	1320	CHMSL Control/Stop Lamp Control (Cutaway)
E3	3 D-BU	47	Trailer Auxiliary Control (UY7)
E4	1 YE	1618	Trailer Left Rear Turn/Stop Lamp Control (UY7)

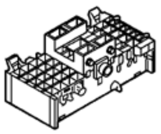
E5	2 RD/WH	1940	Battery Positive Voltage (LMF)
Pin	**Wire**	**Circuit**	**Function**
F1	1 L-GN	1624	Trailer Backup Lamps Control (Cutaway, 8S3 or UY7)
F2	0.5 RD/WH	40	Battery Positive Voltage (LU3, L20, LMF or L96)
F3	1 BN	2109	Trailer Park Lamps Control (Cutaway)
F4-F8	--	--	Not Used

Fuse Block - Underhood X3

Connector Part Information

Harness Type: Instrument Panel
OEM Connector: 15477822
Service Connector: 19115189
Description: 56-Way F GT 150 280 Metri-Pack 800 Series (BK)





Terminal Part Information

Pins: A1-A5, A7, C1-C2, C4-C8, H2-
Terminated Lead: 13575735
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 12191812/19
Core/Insulation Crimp : Pins: A1-A2, A5, C1-C2, C4, H2, H4-H8, K8 - E/C
Core/Insulation Crimp: Pins: A3-A4, A7, C5, C6-C8, H3, K3, K7 - C/A

Pins: B2-B5, D1-D3, G1-G3, J1-J4
Terminated Lead: 13575753
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pins: B2-B3, D1-D2, G2-G3 - E/A
Core/Insulation Crimp: Pins: B4-B5, D3, G1, J1-J4 - 2/A

Pins: B1, D4, G4-G5
Terminated Lead: 13575754
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304713/19
Core/Insulation Crimp: Pins: B1, D4 - F/D
Core/Insulation Crimp: Pins: G4-G5 - 4/4

Pin	Wire	Circuit	Function
A1	0.35 PK	1639	Ignition Voltage
A2	0.35 RD/WH	2840	Battery Positive Voltage (8S8)
A3	0.8 RD/WH	2240	Battery Positive Voltage
A4	0.8 RD/WH	3040	Battery Positive Voltage
A5	0.5 RD/WH	2540	Battery Positive Voltage
A6	--	--	Not Used
A7	0.8 RD/WH	2740	Battery Positive Voltage
A8	--	--	Not Used
B1	3 RD/WH	3940	Battery Positive Voltage (UY7)
B2	0.35 PK	1139	Ignition Voltage
B3	0.35 PK	1139	Ignition Voltage
B4	0.8 RD/WH	1040	Battery Positive Voltage
B5	1 BN	2109	Trailer Park Lamps Control (UY7)
C1	0.35 PK	239	Ignition Voltage
C2	0.5 PK	2239	Ignition Voltage (JL4)
C3	--	--	Not Used
C4	0.35 OG	5186	Left Trailer Turn Signal Lamp (UY7)
C5	1 BN	2109	Trailer Park Lamps Control (Cutaway)
C6	1 D-GN	619	Right Rear Turn Signal Lamp Control (Cutaway)
C7	0.8 D-BU/WH	149	Courtesy Lamp Control (Cutaway)
C8	1 YE	618	Left Rear Turn Signal Lamp Control (Cutaway)
D1	0.5 OG	228	Windshield Washer Pump Control
D2	0.35 YE	5199	Run/Crank Relay Coil Control
D3	1 L-GN	1624	Trailer Backup Lamps Control (Cutaway, UF7 or 8S8)
D4	3 D-BU	47	Trailer Auxiliary Control (UY7)
D5	--	--	Not Used
E1-E2	--	--	Not Used
F1-F2	--	--	Not Used

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Fuse Block - Underhood X3 (cont d)

G1	0.8 RD/WH	640	Battery Positive Voltage
G2	0.35 OG	2268	Windshield Washer Relay Control
Pin	**Wire**	**Circuit**	**Function**
G3	0.35 YE	5187	Right Trailer Turn Signal Lamp (UY7)
G4	2 PU	92	Windshield Wiper Motor High Speed
G5	2 D-GN	95	Windshield Washer Switch Signal
H1	--	--	Not Used
H2	0.5 RD/WH	3840	Battery Positive Voltage (except LU3 or LMF)
	1 RD/WH	3840	Battery Positive Voltage (LU3 or LMF)
H3	0.35 TN	28	Horn Relay Control
	0.35 TN	28	Horn Relay Control
H4	0.35 PK/WH	1970	Headlamp Low Beam Relay Control
H5	0.35 PU	544	Headlamp Low Beam Control

H6	0.35 GY	91	Windshield Wiper Switch Signal 2
H7	0.5 WH	5065	Stop Lamps Control
Pin	**Wire**	**Circuit**	**Function**
H8	0.35 TN	860	Front Windshield Wiper Switch High Signal
J1	0.8 RD/WH	640	Battery Positive Voltage
J2	0.8 RD/WH	2940	Battery Positive Voltage
J3	0.8 BN	2309	Front Park Lamps Control
J4	0.8 D-BU/WH	1315	Right Front Turn Signal Lamp Control
J5	--	--	Not Used
K1-K2	--	--	Not Used
K3	0.8 RD/WH	2140	Battery Positive Voltage
K4-K6	--	--	Not Used
K7	0.8 L-BU/WH	1314	Left Front Turn Signal Lamp Control
K8	0.35 TN/WH	1969	Headlamp High Beam Relay Control

Fuse Block - Underhood X4

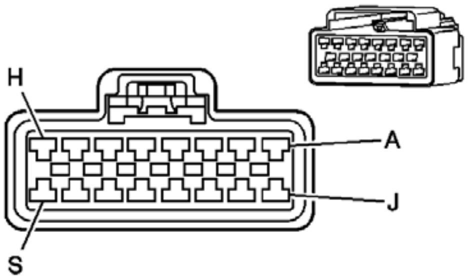
Connector Part Information

Harness Type: Forward Lamp

OEM Connector: 15326952

Service Connector: 15306426

Description: 16-Way F GT 280 Series (BK)



Terminal Part Information

Terminated Lead: 13575753

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: 15304711/8

Core/Insulation Crimp: Pins: B-C, F, K-L, N, P - E/A

Core/Insulation Crimp: Pins: D-E, M - 2/A

Pin	Wire	Circuit	Function
A	--	--	Not Used
B	0.5 BN	2309	Front Park Lamps Control
C	0.5 BN	2309	Front Park Lamps Control
D	0.8 D-BU/WH	1315	Right Front Turn Signal Lamp Control
E	0.8 L-BU/WH	1314	Left Front Turn Signal Lamp Control
F	0.5 YE	712	Left Headlamp Low Beam Control (V22)
	0.5 YE	712	Left Headlamp Low Beam Control (V22)
	0.35 YE	712	Left Headlamp Low Beam Control (except V22)
	0.35 YE	712	Left Headlamp Low Beam Control (except V22)
G-J	--	--	Not Used
K	0.5 YE	712	Left Headlamp Low Beam Control (V22 without T79)
L	0.35 YE	712	Left Headlamp Low Beam Control (except V22 without T79)
M	0.8 L-GN/BK	311	Right Headlamp High Beam Control
N	0.5 D-GN/WH	711	Left Headlamp High Beam Control
P	0.35 TN/WH	312	Right Headlamp Low Beam Control (except V22)
	0.5 TN/WH	312	Right Headlamp Low Beam Control (V22)
R-S	--	--	Not Used

Fuse Block - Underhood X5

Terminal Part Information
Harness Type: Battery Positive (Gas)
Harness Type: Auxiliary Battery Positive (Diesel)
Terminal: 15441775
Core/Insulation Crimp: Not Available
Description: Ring Terminal

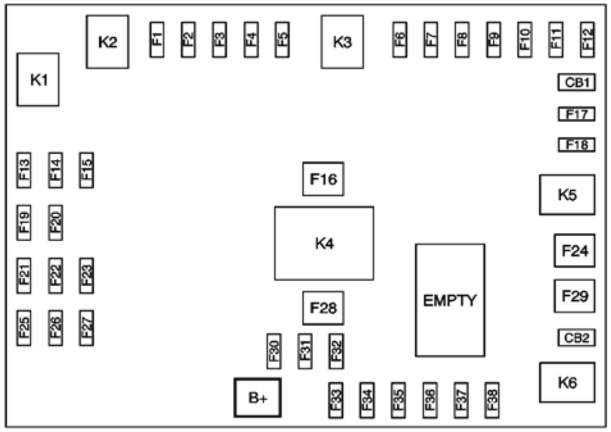
Pin	Wire	Circuit	Function
S	19 RD	1	Battery Positive Voltage

Fuse Block - Underhood X6

Terminal Part Information
Harness Type: Instrument Panel
Harness Type: LPG (KO7)
Terminal: Service by Harness
Core/Insulation Crimp: Not Available
Description: Ring Terminal

Pin	Wire	Circuit	Function
S	19 RD/BK	842	Battery Positive Voltage
S	3 OG	-	Battery Positive Voltage (KO7)

Fuse Block - Body Label



MINIFUSES

F1	15A	EMPTY
F2	2A	STR/WHL/SNSR
F3	15A	AUX PRK LAMP(S) (CUTAWAY)
F4	10A	FTR PRK LAMP(S)
F5	15A	TRLR PRK LAMP(S)
F6	10A	UPFTR PRK LAMP(S)
F7	10A	RT REAR PRK LAMP
F8	10A	LT REAR PARK LAMP
F9	5A	OSRVM SW
F10	10A	AIRBAG/AOS
F11	10A	ONSTAR
F12	15A	EMPTY
F13	10A	HVAC2
F14	20A	HVAC1
F15	15A	EMPTY
F17	20A	OSRVM HTR
F18	30A	REAR DEFOG
F19	10A	CMPS
F20	15A	RDO/CHIME
F21	10A	RFA/TPM
F22	2A	IGN SW (DLIS)/PK3
F23	10A	I/P CLUSTER
F25	10A	HVAC CNTRL
F26	10A	AUX/TRLR BCK/UP
F27	10A	TAIL LAMP(S) BCK/UP
F30	15A	UPFTR CTSY LAMP(S)
F31	15A	FRT DR LCK
F32	15A	REAR DR LCK
F33	15A	CARGO DR UNLCK
F34	15A	FRT PASS DR UNLCK
F35	15A	REAR PASS DR UNLCK
F36	15A	DVR DR UNLCK
F37	15A	EMPTY
F38	15A	EMPTY

J-CASE FUSES

F16	50A		UPFITTER AUX1
F24	30A	CART	EMPTY
F28	50A	CART	UPFITTER AUX2
F28	30A		READING LAMP(S)
F29	30A		REAR BLOWER

CIRCUIT BOARD RELAYS (NOT SHOWN)

K7	BCK/UP
K8	UPFTR CTSY LAMP(S)
K9A	FTR REAR PASS DR UNLCK
K9B	DRVR DR UNLCK
K10A	FTR REAR DR LCK
K10B	CARGO DR UNLCK

CIRCUIT BREAKERS

CB1	30A	PWR SEATS
CB2	25A	PWR WINDOW(S)

PLUG IN RELAYS

K1	(HC MICRO) RUN
K2	(HC MICRO) EMPTY
K3	PRK LAMP(S)
K4	(HC MINI) UPFTR AUX2
K5	(HC MICRO) REAR DEFOG
K6	(HC MICRO) RAP

No.	Device	Rating	Description
F1	EMPTY	--	Not Used
F2	STR/WHL/ SNSR Fuse	2A	Inflatable Restraint Steering Wheel Module Coil (K34 or W1Y)
F3	AUX PRK LAMP(S) (CUT-AWAY) Fuse	15A	X405 (Cutaway)
F4	FRT PRK LAMP(S) Fuse	10A	Inflatable Restraint I/P Module Disable Switch (C99), Marker Lamp - Left Front, Marker Lamp - Right Front, Park/Turn Signal Lamp - Left and Park/Turn Signal Lamp - Right
F5	TRLR PRK LAMP(S) Fuse	15A	Trailer Connector (UY7)
F6	UPFTR PRK LAMP(S) Fuse	10A	X320 (YF2 or YF7)
F7	RT REAR PRK LAMP Fuse	10A	Tail/Stop and Turn Signal Lamp - Right (Cargo or Passenger)
F8	LT REAR PARK LAMP Fuse	10A	License Lamp (Cargo or Passenger) and Tail/Stop and Turn Signal Lamp - Left (Cargo or Passenger)
F9	OSRVM SW Fuse	5A	Outside Rearview Mirror Switch (DE5 or DE7)
F10	AIRBAG/AOS Fuse	10A	Inflatable Restraint Front Passenger Presence System (PPS) Sensor (Light Duty without YF7), Inflatable Restraint Sensing and Diagnostic Module(SDM) and Inflatable Restraint Vehicle Rollover Sensor (ASF)
F11	ONSTAR Fuse	10A	Vehicle Communication Interface Module (VCIM) (UE1)
F12	EMPTY	--	Not Used
F13	HVAC2 Fuse	10A	Air Temperature Actuator, Air Temperature Actuator - Auxiliary (C69), Blower Motor High Speed Relay - Auxiliary (C36 without C69), Blower Motor Low Speed Relay - Auxiliary (C36 without C69), Blower Motor Medium Speed Relay - Auxiliary (C36 without C69), HVAC Control Assembly (C49, DE5 or DE7), HVAC Control Assembly - Rear Auxiliary (C69 with Rear Auxiliary Controls), HVAC Control Module - Auxiliary and Mode Actuator - Auxiliary (C69)
F14	HVAC1 Fuse	20A	HVAC Control Assembly and Vacuum Pump (LGH)
F15	EMPTY	--	Not Used
F16	UPFITTER AUX1 Fuse	50A	Blunt Cut (YF1), X222 (YF2 or YF7) and X321 (YF2 or YF7)
F17	OSRVM HTR Fuse	20A	Outside Rearview Mirror - Driver (DE5 or DE7) and Outside Rearview Mirror - Passenger (DE5 or DE7)
F18	REAR DEFOG Fuse	30A	Rear Window Defogger Grid - Left (C49) and Rear Window Defogger Grid - Right (C49)
F19	CMPS Fuse	10A	Electronic Compass Module (U80)
F20	RDO/CHIME Fuse	15A	Chime Module (UL5), Digital Radio Receiver (U2K) and Radio (except UL5)

Fuse Block - Body Label (cont d)

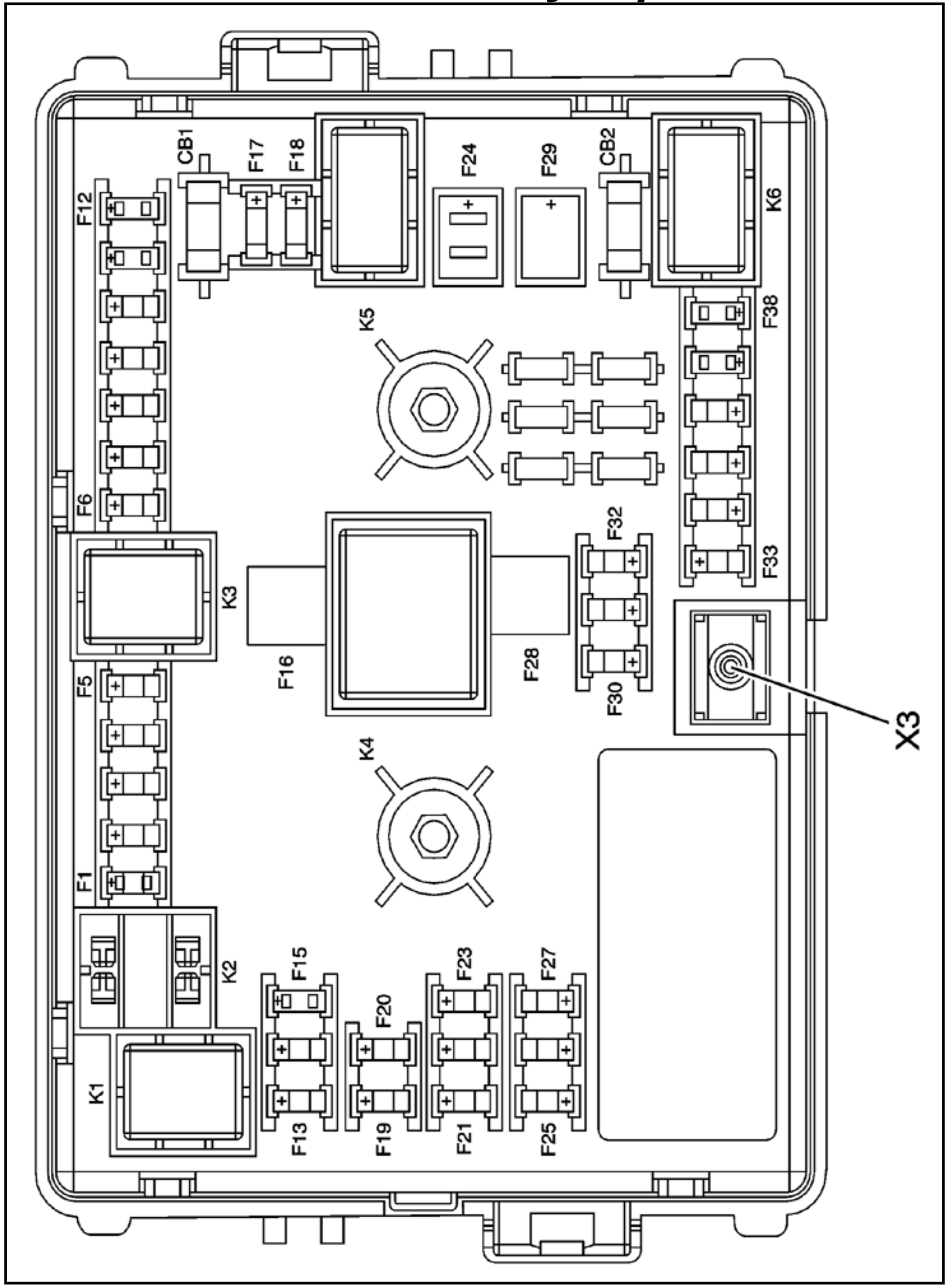
No.	Device	Rating	Description
F21	RFA/TPM Fuse	10A	Remote Control Door Lock Receiver (RCDLR) (AU0 or UJ6)
F22	IGN SW (DLIS)/PK3 Fuse	2A	Ignition Switch and Theft Deterrent Module (TDM)
F23	I/P CLUSTER Fuse	10A	Instrument Panel Cluster (IPC) (except 8S8)
F24	EMPTY	--	Not Used
F25	HVAC CNTRL Fuse	10A	HVAC Control Assembly (C49, DE5 or DE7)
F26	AUX/TRLR BCK/UP Fuse	10A	Backup Alarm (8S3), Trailer Connector (UY7) and X405 (Cutaway)
F27	TAIL LAMP(S) BCK/UP Fuse	10A	Backup Lamp - Left (Cargo or Passenger) and Backup Lamp - Right (Cargo or Passenger)
F28	UPFITTER AUX2 Fuse	50A	Blunt Cut (YF1), X321 (YF2 or YF7) and X222 (YF2 or YF7)
	READING LAMP(S) Fuse	30A	Blunt Cut - Provisional Wiring (5B3)
F29	REAR BLWR Fuse	30A	Blower Motor High Speed Relay - Auxiliary (C36 without C69), Blower Motor Low Speed Relay - Auxiliary (C36 without C69) and Blower Motor Medium Speed Relay - Auxiliary (C36 without C69)
F30	UPFTR CTSY LAMP(S) Fuse	15A	Body Control Module (except YF7), Dome Lamp (Cargo), Dome/Reading Lamp - Front, Dome/Reading Lamp - Middle (Passenger), Dome/Reading Lamp - Rear (Passenger), X320 (YF7) and X405 (Cutaway)
F31	FRT DR LCK Fuse	15A	Door Latch - Driver (AU3) and Door Latch - Passenger (AU3)
F32	REAR DR LCK Fuse	15A	Door Latch - Cargo (Cargo or Passenger), Door Contact Plate - Left Side (E26) and Door Contact Plate - Right Side (E24 or YA2)
F33	CARGO DR UNLCK Fuse	15A	Door Latch - Cargo (Cargo or Passenger with AU3)
F34	FRT PASS DR UNLCK Fuse	15A	Door Latch - Passenger (AU3)
F35	REAR PASS DR UNLCK Fuse	15A	Door Contact Plate - Left (E26 with AU3), Door Contact Plate - Right (Cargo or Passenger with AU3) and Fuse Block - Body
F36	DVR DR UNLCK Fuse	15A	Door Latch - Driver (AU3)
F37	EMPTY	--	Not Used
F38	EMPTY	--	Not Used
CB1	PWR SEATS Circuit Breaker	30A	Seat Adjuster Switch - Driver (AG1) and Seat Adjuster Switch - Passenger (AG2)
CB2	PWR WINDOW(S) Circuit Breaker	25A	Window Switch - Driver (A31) and Window Switch - Passenger (A31)
K1	RUN Relay	--	CMPS, HVAC1 and HVAC2 Fuses and UPFTR AUX2 Relay
K2	EMPTY	--	Not Used
K3	PRK LAMP(S) Relay	--	AUX PRK LAMP(S) (Cutaway), FRT PRK LAMP(S), LT REAR PARK LAMP, RT REAR PRK LAMP, TRLR PRK LAMP(S) and UPFTR PRK LAMP(S) Fuses
K4	UPFTR AUX2 Relay	--	READING LAMP(S) (5B3) or UPFITTER AUX2 (YF1, YF2 or YF7) Fuses
K5	REAR DEFOG Relay	--	OSRVM HTR and REAR DEFOG Fuses
K6	RAP Relay	--	PWR WINDOW(S) Circuit Breaker (A31)
Note: Relays listed below are non-serviceable Printed Circuit Board (PCB) relays and are internal to the block.			
K7	BCK/UP PCB Relay	--	AUX/TRLR BCK/UP and TAIL LAMP(S) BCK/UP Fuses

(continued on next page)

Fuse Block - Body Label (cont d)

K8	UPFTR CTSY LAMP(S) PCB Relay	--	UPFTR CTSY LAMP(S) Fuse
No.	**Device**	**Rating**	**Description**
K9A	FTR REAR PASS DR UNLCK PCB Relay	--	FRT PASS DR UNLCK and REAR PASS DR UNLCK Fuses
K9B	DRVR DR UNLCK PCB Relay	--	DVR DR UNLCK Fuse
K10A	FTR REAR DR LCK PCB Relay	--	FRT DR LCK and REAR DR LCK Fuses
K10B	CARGO DR UNLCK PCB Relay	--	CARGO DR UNLCK Fuse

Fuse Block - Body Top View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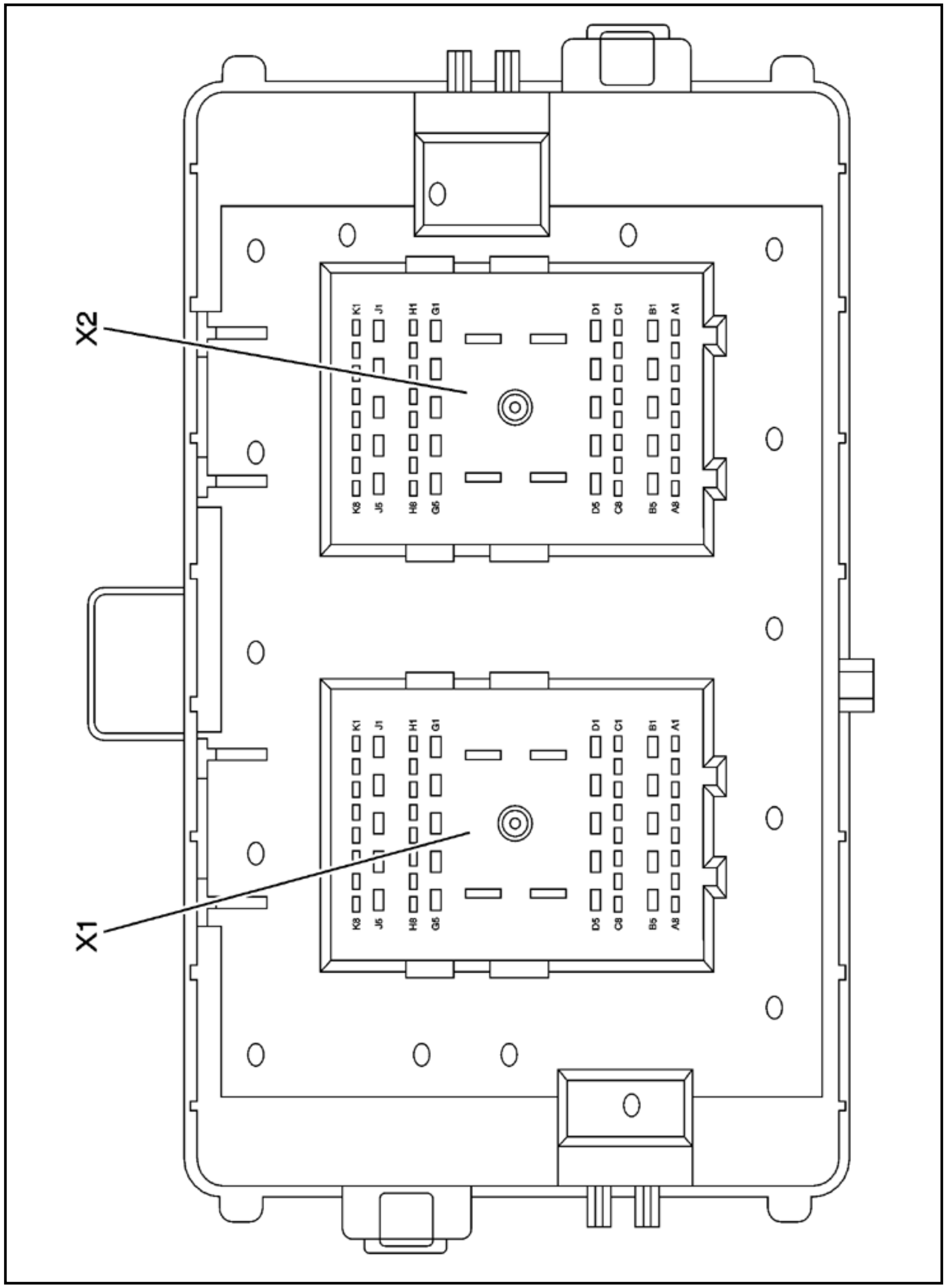
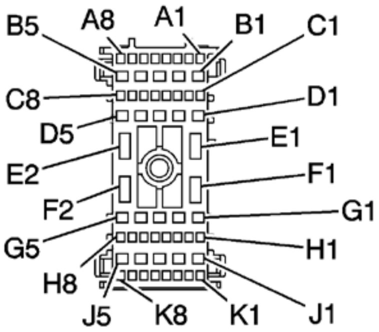
F17
F18
F24
F29
CB2
K6
F12
F38
K5
F32
F6
F33
K3
F16
F28
F30
X3
F5
K4
F1
K2
F15
F23
F27
F20
K1
F13
F19
F21
F25

Fuse Block - Body Bottom View


X2
K1
J1
H1
G1
D1
C1
B1
A1
K8
J5
H8
G5
D5
C8
B5
A8
X1
K1
J1
H1
G1
D1
C1
B1
A1
K8
J5
H8
G5
D5
C8
B5
A8

Fuse Block - Body X1



Connector Part Information

Harness: Instrument Panel
OEM: 15477823
Service: 13574911
Description: 56-Way F GT 150 280 Metri-Pack Series (L-GY)

Terminal Part Information

Pins: A4-A6, C1-C5, C7-C8, H1-H8, K2-K5, K7-K8
Terminal/Tray: 12191812/19
Core/Insulation Crimp: Pins: A4-A6, C2, C4-C5, C7, H3-H4, H6-H8, K2-K5, K7-K8 - E/C
Core/Insulation Crimp: Pins: C1, C3, C8, H1-H2, H5 - C/A
Release Tool/Test Probe: J-38125-553/J-35616-2A (GY)

Pins: B1-B5, D5, G3-G4, J5
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pins: B3 - E/A
Core/Insulation Crimp: Pins: B1-B2, B4-B5, D5, G3-G4, J5 - 2/A
Release Tool/Test Probe: J-38125-553/J-35616-4A (PU)

Pins: E1, F1
Terminal/Tray: 12110127/19
Core/Insulation Crimp: F/G
Release Tool/Test Probe: J-38125-558/J-35616-44 (YE)

Pins: E2
Terminal/Tray: 12065915/5
Core/Insulation Crimp: C/A
Release Tool/Test Probe: J-38125-558/J-35616-44 (YE)

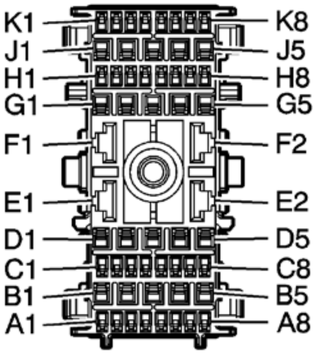
Pin	Wire	Circuit	Function
A1-A3	--	--	Not Used
A4	0.35 YE	6817	LED Backlight Dimming Control (K34 or W1Y)
A5	0.35 D-BU	45	Park Lamp Control
A6	0.35 BN	6136	Supply Voltage (K34 or W1Y)
A7-A8	--	--	Not Used
B1	0.8 RD/WH	3240	Battery Positive Voltage (UE1)
B2	1 BN	2109	Trailer Park Lamps Control (UY7)
B3	0.35 BN	341	Ignition Voltage
B4	0.5 BN	2309	Front Park Lamps Control
	0.8 BN	2309	Front Park Lamps Control (C99)
B5	1 BN	2109	Trailer Park Lamps Control (Cut-away)
C1	1 YE	618	Left Rear Turn Signal Lamp Control (Passenger or Cargo)
C2	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control
C3	1 D-GN	619	Right Rear Turn Signal Lamp Control (Passenger or Cargo)
C4	0.35 WH	193	Rear Defog Relay Control (C49, DE5 or DE7)
C5	0.35 BN	341	Ignition Voltage
C6	--	--	Not Used
C7	0.35 OG	300	Ignition Voltage
C8	0.8 BN	141	Ignition Voltage (LGH)
D1-D4	--	--	Not Used
D5	1 BN	141	Ignition Voltage
E1	5 RD/BK	1042	Battery Positive Voltage (YF7)
E2	0.5 BK	350	Ground
F1	5 BN	541	Ignition Voltage (YF2 or YF7)

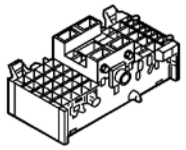
(continued on next page)

Fuse Block - Body X1 (Cont d)

Pin	Wire	Circuit	Function
F2	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
G1-G2	--	--	Not Used
G3	0.8 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
G4	1 RD/WH	340	Battery Positive Voltage
G5	--	--	Not Used
H1	0.8 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
H2	0.8 D-BU/WH	149	Courtesy Lamp Control (Cutaway)
	0.8 D-BU/WH	149	Courtesy Lamp Control (except YF2 or YF7)
H3	0.35 BK/WH	351	Ground
H4	0.35 YE	43	Ignition Voltage
H5	0.8 RD/WH	4440	Battery Positive Voltage (C49, DE5 or DE7)
H6	0.35 RD/WH	2840	Battery Positive Voltage (except 8S8)
H7	0.35 RD/WH	540	Battery Positive Voltage
H8	0.5 RD/WH	5340	Battery Positive Voltage (AU0 or UJ6)
Pin	**Wire**	**Circuit**	**Function**
J1-J4	--	--	Not Used
J5	1 L-GN	1624	Trailer Backup Lamps Control (Cutaway, UY7 or 8S3)
K1	--	--	Not Used
K2	0.5 YE	356	Driver Door Lock Relay Unlock Control (AU3)
K3	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
K4	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 without PRP)
	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 with PRP)
K5	0.5 YE	356	Driver Door Lock Relay Unlock Control (AU3 without PRP)
	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 with PRP)
K6	--	--	Not Used
K7	0.5 GY/BK	690	Courtesy Lamp Control (YF2 or YF7)
K8	0.35 D-BU	38	Backup Lamp Relay Control

Fuse Block - Body X2





Connector Part Information

Harness: Body
OEM: 15477822
Service: 19115189
Description: 56-Way F GT 150 280 Metri-Pack 800 Series (BK)

Terminal Part Information

Pins: A1-A6, B4, C2-C8, H2-H3, H5-H8, K3, K7-K8
Terminal/Tray: 12191812/19
Core/Insulation Crimp: Pins: A1-A6, B4, C3-C5, C8, H2-H3, H5-H7 - E/C
Core/Insulation Crimp: Pins: C2, C6-C7, H8, K3, K7-K8 - C/A
Release Tool/Test Probe: J-38125-553/J-35616-2A (GY)

Pins: B3-B4, D3-D4, G4-G5, J1-J5
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pins: B4 - E/A
Core/Insulation Crimp: Pins: B3, D3-D4, G4-G5, J1-J5 - 2/A
Release Tool/Test Probe: J-38125-553/J-35616-4A (PU)

Pins: B1-B2, D1-D2, G1-G2
Terminated Lead: 13327131
Terminal/Tray: 15304713/19
Core/Insulation Crimp: F/D
Release Tool/Test Probe: J-38125-553/J-35616-4A (PU)

Pins: E2, F1-F2
Terminal/Tray: 12110127/19
Core/Insulation Crimp: F/G
Release Tool/Test Probe: J-38125-558/J-35616-44 (YE)

Pin	Wire	Circuit	Function
A1	0.5 RD/WH	3440	Battery Positive Voltage (Light Duty except C99 or YF7)
A2	0.5 RD/WH	3440	Battery Positive Voltage (ASF)
A3	0.5 RD/WH	3440	Battery Positive Voltage
A4	0.5 BN	2509	Left Rear Park Lamps Control (Passenger or Cargo)
A5	0.5 BN	2609	Right Rear Park Lamps Control (Passenger or Cargo)
A6	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
A7-A8	--	--	Not Used
B1	3 RD/WH	3540	Battery Positive Voltage (AG2)
B2	3 RD/WH	3540	Battery Positive Voltage (AG1)
B3	1 RD/WH	3240	Battery Positive Voltage (UE1)
B4	0.5 BN	2209	Rear Park Lamps Control (YF2 or YF7)
B5	--	--	Not Used
C1	--	--	Not Used
C2	1 RD/WH	3240	Battery Positive Voltage (UE1)
C3	0.35 BN	341	Ignition Voltage (C69)
C4	0.35 BN	341	Ignition Voltage (C69, C36 or ENC)
C5	0.35 BN	341	Ignition Voltage (C49, DE5, DE7 or C60)
C6	1 D-GN	619	Right Rear Turn Signal Lamp Control (Passenger or Cargo)
C7	1 YE	618	Left Rear Turn Signal Lamp Control (Passenger or Cargo)
C8	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control
D1	5 PU	293	Rear Defog Element Control (C49)
D2	5 PU	293	Rear Defog Element Control (C49)

(continued on next page)

Fuse Block Body X2 (cont d)

D3	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
Pin	**Wire**	**Circuit**	**Function**
D4	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
D5	--	--	Not Used
E1	--	--	Not Used
E2	5 RD/BK	1042	Battery Positive Voltage (YF1, YF2 or YF7)
F1	5 RD/WH	1740	Battery Positive Voltage (C69, C36 or ENC)
F2	5 BN	541	Ignition Voltage (YF1, YF2 or YF7)
	3 BN	541	Ignition Voltage (5B3)
G1	3 D-GN	1001	RAP 12-Volt Fuse Control (A31)
G2	3 D-GN	1001	RAP 12-Volt Fuse Control (A31)
G3	--	--	Not Used
G4	1 GY	295	Door Lock Actuator Lock Control (Passenger or Cargo with AU3)
G5	1 GY	295	Door Lock Actuator Lock Control (AU3 with E26)
	1 GY	295	Door Lock Actuator Lock Control (AU3 with E26 or YA2)
H1	--	--	Not Used
H2	0.35 BN	441	Ignition Voltage
H3	0.35 BK/WH	351	Ground
H4	--	--	Not Used
H5	0.5 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
H6	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
H7	0.5 D-BU/WH	149	Courtesy Lamp Control
H8	0.8 D-BU/WH	149	Courtesy Lamp Control (Passenger)
	0.8 D-BU/WH	149	Courtesy Lamp Control (Passenger or Cargo except YF2 or YF7)
Pin	**Wire**	**Circuit**	**Function**
J1	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
J2	1 TN	294	Door Lock Actuator Unlock Control (Passenger or Cargo with AU3)
J3	0.8 TN	294	Door Lock Actuator Unlock Control (AU3 with E24 or YA2)
	0.8 TN	294	Door Lock Actuator Unlock Control (AU3 with E26)
J4	0.8 TN	294	Door Lock Actuator Unlock Control (AU3)
J5	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
K1-K2	--	--	Not Used
K3	1 TN/BK	1095	Right Rear Door Lock Actuator Unlock Control (Passenger or Cargo with AU3)
K4-K6	--	--	Not Used
K7	1 TN	294	Door Lock Actuator Unlock Control (Passenger or Cargo with AU3)
K8	1 L-GN	24	Backup Lamp Control (Passenger or Cargo)
	1 L-GN	24	Backup Lamp Control (Passenger or Cargo)

Fuse Block Body X3

Terminal Part Information

Harness Type: Instrument Panel

Terminated Lead: Service by Harness - See Part Catalog

Release Tool: Not Available

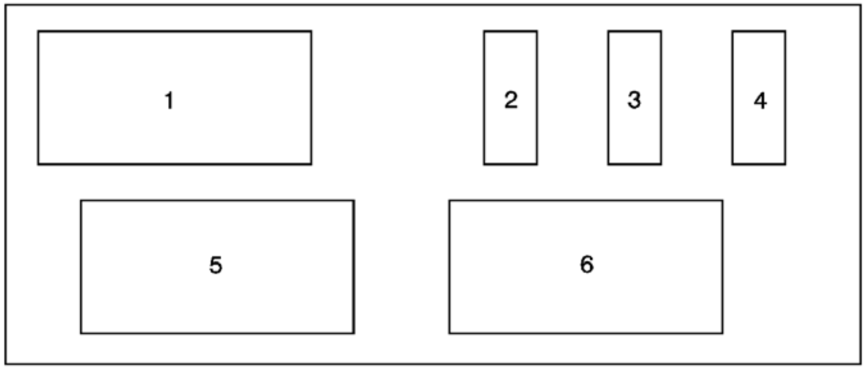
Diagnostic Test Probe: Not Available

Terminal/Tray: Not Available

Core/Insulation Crimp: Not Available

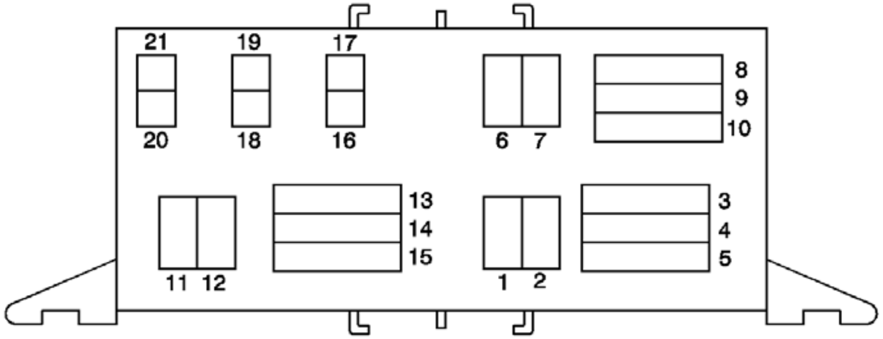
Pin	Wire	Circuit	Function
S	19 RD	842	Battery Positive Voltage

Fuse Block - Rear (PRP) - Top View



No.	Device	Rating	Description
1	Access Panel Relay - Left Side Rear	--	Access Panel Latches - Left Side Rear
2	Dome Fluorescent Work Lamps Fuse	10	Dome Fluorescent Work Lamps (UF2)
3	Panel Actuator Fuse	15	Access Panel Relays
4	--	--	Not Used
5	Access Panel Relay - Left Side Front	--	Access Panel Latches - Left Side Front

Fuse Block - Rear (PRP) - Bottom View

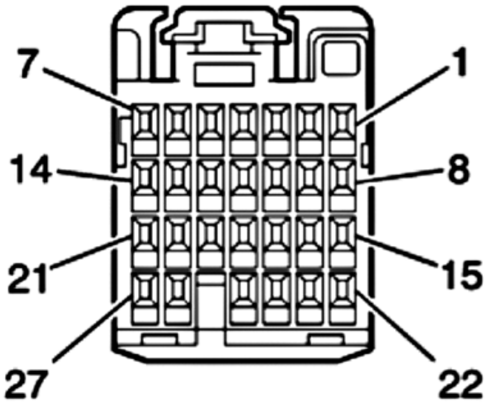


Connector Part Information
Harness Type: Professional
OEM Connector: 63995
Service Connector: Service by Harness - See Part Catalog
Description: 21-Way F Fuse Block (BK)

Terminal Part Information
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: Not Available
Diagnostic Test Probe: Not Available
Terminal/Tray: Not Available
Core/Insulation Crimp: Not Available

Pin	Wire	Circuit	Function
1	OG	740	Battery Positive Voltage
2	TN	294	Access Panel Left Front Side Lock Actuators Unlock Control
3	L-BU	195	Access Panel Left Side Front Relay Control
4	--	--	Not Used
5	OG	740	Battery Positive Voltage
6	OG	740	Battery Positive Voltage
7	PK	1092	Access Panel Left Rear Side Lock Actuators Unlock Control
8	L-GN	1391	Access Panel Left Side Rear Relay Control
9	--	--	Not Used
10	OG	740	Battery Positive Voltage
11	OG	740	Battery Positive Voltage
12	TN/BK	1095	Access Panel Right Side Lock Actuators Unlock Control
13	L-BU	1344	Access Panel Right Side Relay Control
14	--	--	Not Used
15	OG	740	Battery Positive Voltage
16	RD	1042	Battery Positive Voltage (UF2)
17	OG	840	Battery Positive Voltage (UF2)
18	RD	1042	Battery Positive Voltage
19	OG	740	Battery Positive Voltage
20-21	--	--	Not Used

Body Control Module (BCM) X1

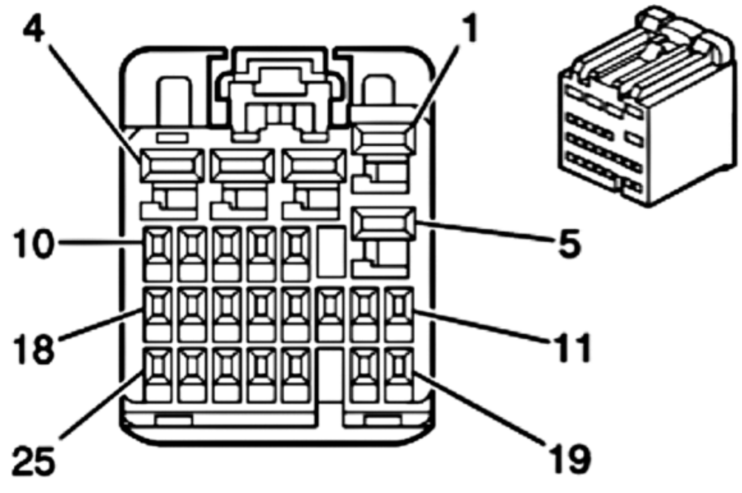


Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15482789
Service Connector: 88988838
Description: 27-Way F HIT Series (L-GN)

Terminal Part Information
Terminated Lead: 13575870
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	--	--	Not Used
2	0.35 PK	1020	Ignition Voltage
3	0.35 GY	1884	Cruise Control Switch Signal
4	0.35 WH	530	Ignition Voltage
5	0.35 L-GN	1715	Windshield Wiper Switch High Signal
6	0.35 L-GN	6818	Steering Wheel Control Signal
7	--	--	Not Used
8	0.35 TN/BK	6009	Low Reference
9	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
10-13	--	--	Not Used
14	0.35 PK	3	Ignition Voltage
15	0.35 D-GN	663	Hazard Switch Left Turn Signal
16	0.35 TN	664	Hazard Switch Turn Right Signal
17	0.35 PK	1444	12-Volt Reference
18	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
19	0.35 WH	111	Theft Deterrent Alarm Enable Signal
20	0.35 PU	5526	Tap Up/Tap Down Switch Signal
21	0.35 BN	4	Ignition Voltage
22	--	--	Not Used
23	0.35 L-BU	1788	Tow/Haul Switch Signal
24	0.35 PK	94	Windshield Washer Switch Signal
25	0.35 YE	307	Headlamp Switch Flash to Pass Signal
26	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
27	--	--	Not Used

Body Control Module (BCM) X2



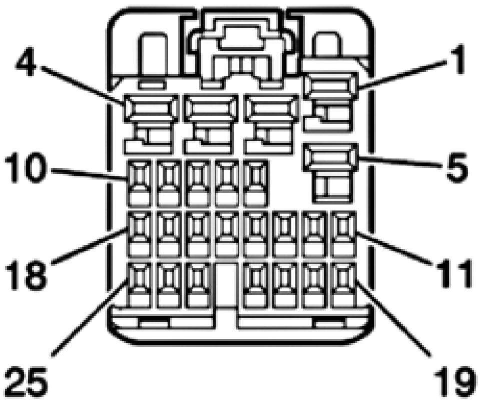
Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15482790
Service Connector: 88988839
Description: 25-Way F HIT Series (NA)

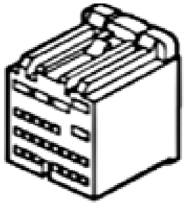
Terminal Part Information
Pins: 1-3, 5
Terminated Lead: 13327199
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: SNAC-A061T-M2.8/20
Core/Insulation Crimp: E/A

Pins: 8, 11-12, 17-18, 21-22, 25
Terminated Lead: 13575870
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	0.8 OG	1732	Courtesy Lamp Control
2	0.5 RD/WH	2540	Battery Positive Voltage
3	0.5 BN/WH	230	Instrument Panel Lamps Dimming Control
4	--	--	Not Used
5	0.5 GY/BK	690	Courtesy Lamp Control (YF7)
	0.8 D-BU/WH	149	Courtesy Lamp Control (without YF7)
6-7	--	--	Not Used
8	0.35 L-BU	13	Headlamp Switch Park Lamps Signal
9-10	--	--	Not Used
11	0.35 WH	278	Ambient Light Sensor Signal
12	0.35 WH	103	Headlamp Switch Headlamps On Signal
13-16	--	--	Not Used
17	0.35 D-GN	306	Headlamp Switch Headlamps Off Signal
18	0.35 D-BU/WH	149	Courtesy Lamp Control
19-20	--	--	Not Used
21	0.5 D-BU	6727	Traction Control Preference Switch Signal (JL4)
22	0.35 D-BU	38	Backup Lamp Relay Control
23-24	--	--	Not Used
25	0.35 PU	328	Interior Lamp Defeat Switch Signal

Body Control Module (BCM) X3





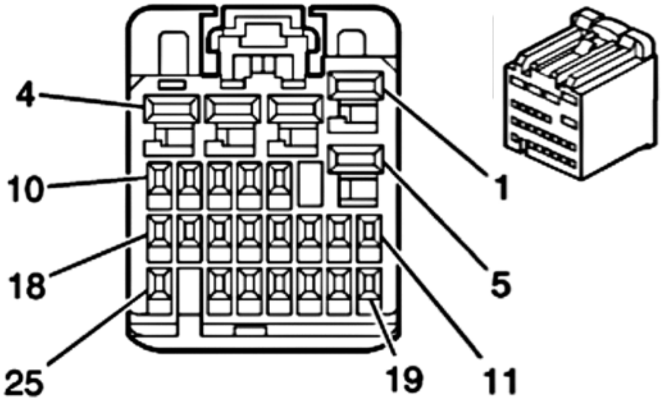
Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15482791
Service Connector: 88988840
Description: 25-Way F HIT Series (L-BU)

Terminal Part Information
Pins: 1-3, 5
Terminated Lead: 13575871
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: SNAC-A061T-M2.8/20
Core/Insulation Crimp: E/A

Pins: 8-19, 22
Terminated Lead: 13327195
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	0.8 BK/WH	351	Ground
2	0.8 RD/WH	2140	Battery Positive Voltage
3	0.5 RD/WH	3840	Battery Positive Voltage
4	--	--	Not Used
5	0.8 BK/WH	351	Ground
6-7	--	--	Not Used
8	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
9	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
10	0.35 D-GN	5060	Low Speed GMLAN Serial Data
11	0.35 D-GN	44	Instrument Panel Lamps Dimmer Switch Signal
12	0.35 OG/WH	812	IP Dimming Voltage Reference
13	0.5 TN	5380	Brake Position Sensor Signal
14	0.5 BN	5382	Brake Position Sensor Low Reference
15	0.5 GY	5381	Brake Position Sensor 5 Volt Reference
16	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
17	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
18	0.35 YE	6817	LED Backlight Dimming Control
19	0.5 L-BU	5986	Serial Data Communication Enable
20-21	--	--	Not Used
22	0.35 D-GN/WH	7158	Cruise Control Indicator Dimming Signal
23-25	--	--	Not Used

Body Control Module (BCM) X4



Connector Part Information

Harness Type: Instrument Panel

OEM Connector: 15482792

Service Connector: 88988841

Description: 25-Way F HIT Series (BK)

Terminal Part Information

Pins: 1-5

Terminated Lead: 13327199

Release Tool: J-38125-12A

Diagnostic Test Probe: J-35616-35 (VT)

Terminal/Tray: SNAC-A061T-M2.8/20

Core/Insulation Crimp: E/A

Pins: 6-7, 9-13, 15-17, 19-21, 23-24

Terminated Lead: 13575870

Release Tool: J-38125-12A

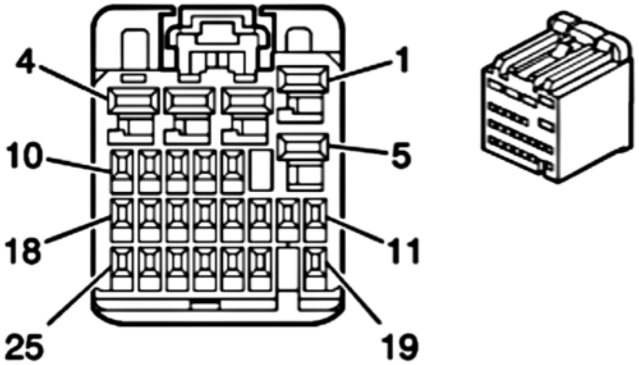
Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: SNAC3-A021T-M0.64/20

Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	0.8 RD/WH	2740	Battery Positive Voltage
2	0.8 RD/WH	3040	Battery Positive Voltage
3	0.8 RD/WH	2940	Battery Positive Voltage
4	0.8 RD/WH	2240	Battery Positive Voltage
5	0.8 D-BU/WH	1315	Right Front Turn Signal Lamp Control
6	0.35 D-GN	6134	Local Interconnect Network 3
7	0.35 YE	196	Windshield Wiper Motor Park Switch Signal
8	--	--	Not Used
9	0.5 BK/WH	451	Ground (LU3 or LMF)
10	0.5 RD/WH	2840	Battery Positive Voltage (LU3 or LMF)
11	0.5 L-GN	1391	Ignition Voltage (PRP)
12	0.35 YE	5187	Right Trailer Turn Signal Lamp (UY7)
13	0.35 OG	5186	Left Trailer Turn Signal Lamp (UY7)
14	--	--	Not Used
15	0.35 OG	2268	Windshield Washer Relay Control
16	0.35 TN/WH	1969	Headlamp High Beam Relay Control
17-18	--	--	Not Used
19	0.5 D-BU	5985	Accessory Wakeup Serial Data
20	0.5 L-BU	1344	Trunk Release Control (PRP)
21	0.35 YE	5199	Run/Crank Relay Coil Control
22	--	--	Not Used
23	0.35 PU	544	Headlamp Low Beam Control
24	0.5 L-BU	244	Front Passenger Door Lock Switch Lock Control (PRP)
25	--	--	Not Used

Body Control Module (BCM) X5

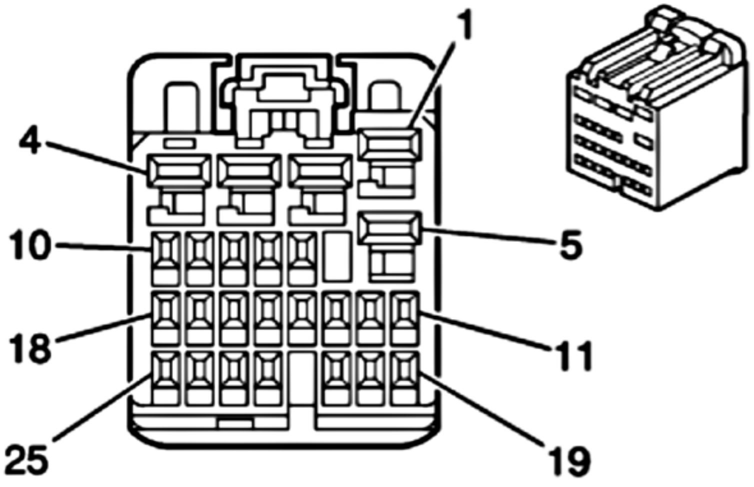


Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15480179
Service Connector: 88988837
Description: 25-Way F HIT Series (BN)

Terminal Part Information
Pins: 6, 8-11, 13, 15-16, 18-21, 23-24
Terminated Lead: 13575870
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J
Pins: 1-2, 4-5
Terminated Lead: 13327199
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: SNAC-A061T-M2.8/20
Core/Insulation Crimp: Pins: 1-2 - C/A
Core/Insulation Crimp: Pins: 4-5 - E/A

Pin	Wire	Circuit	Function
1	1 YE	618	Left Rear Turn Signal Lamp Control
2	1 D-GN	619	Right Rear Turn Signal Lamp Control
3	--	--	Not Used
4	0.8 L-BU/WH	1314	Left Front Turn Signal Lamp Control
5	0.5 WH	5065	Stop Lamps Control
6	0.35 L-BU/WH	6311	Torque Converter Clutch (TCC) Brake Signal
7	--	--	Not Used
8	0.5 PK	5076	5-Volt Reference (LU3 or LMF)
9	0.5 WH	5075	Current Sensor Signal (LU3 or LMF)
10	0.5 BN	5077	Low Reference (LU3 or LMF)
11	0.35 YE	43	Ignition Voltage
12	--	--	Not Used
13	0.35 OG	300	Ignition Voltage
14-15	--	--	Not Used
16	0.35 L-BU	1134	Park Brake Switch Signal
17	--	--	Not Used
18	0.35 TN	28	Horn Relay Control
19	--	--	Not Used
20	0.35 GY	91	Windshield Wiper Switch Signal 2
21	0.35 TN	860	Front Windshield Wiper Switch High Signal
22	--	--	Not Used
23	0.35 PK/WH	1970	Headlamp Low Beam Relay Control
24	0.35 D-BU	45	Park Lamp Control
25	--	--	Not Used

Body Control Module (BCM) X6



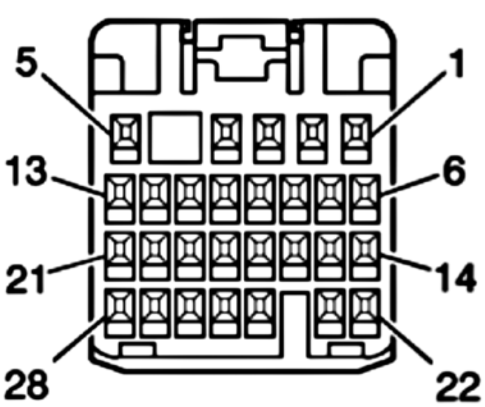
Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15482793
Service Connector: 88988842
Description: 25-Way F HIT Series (PK)

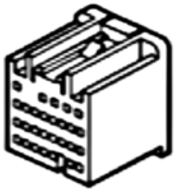
Terminal Part Information
Pin 2
Terminated Lead: 13327199
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: SNAC-A061T-M2.8/20
Core/Insulation Crimp: E/A

Pins: 8-10, 12, 14-16, 18, 22
Terminated Lead: 13575870
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	--	--	Not Used
2	0.8 L-BU	1320	CHMSL Control (Passenger or Cargo)
3-7	--	--	Not Used
8	0.35 TN/WH	746	Right Front Door Ajar Switch Signal
9	0.35 D-BU	245	Passenger Door Lock Switch Unlock Control (AU3)
10	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
11	--	--	Not Used
12	0.35 PK/BK	1303	Liftgate Ajar Switch Signal (Passenger or Cargo)
13	--	--	Not Used
14	0.35 YE/BK	1181	Right Rear Door Open Switch Signal (Passenger or Cargo)
15	0.35 D-BU/WH	1179	Left Rear Door Open Switch Signal (E26)
16	0.35 L-GN	1177	Right Front Door Open Switch Signal
17	--	--	Not Used
18	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
19-21	--	--	Not Used
22	0.35 L-GN	5926	Rear Access Open Switch Signal (Passenger or Cargo)
23-25	--	--	Not Used

Body Control Module (BCM) X7





Connector Part Information

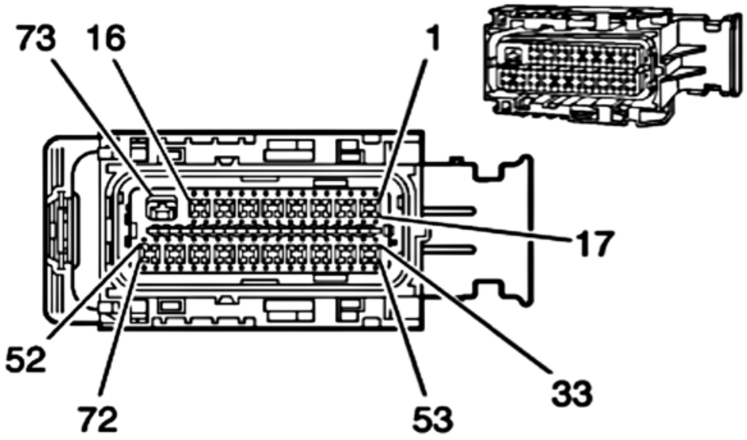
Harness Type: Instrument Panel
OEM Connector: 15466053
Service Connector: 88988806
Description: 28-Way F HIT Series (GY)

Terminal Part Information

Terminated Lead: 13575870
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SNAC3-A021T-M0.64/20
Core/Insulation Crimp: J/J

Pin	Wire	Circuit	Function
1	--	--	Not Used
2	0.5 YE	356	Driver Door Lock Relay Unlock Control (Passenger or Cargo with AU3)
3-5	--	--	Not Used
6	0.5 YE	356	Driver Door Lock Relay Unlock Control (AU3)
7	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
8	--	--	Not Used
9	0.5 L-BU	244	Passenger Door Lock Switch Lock Control (AU3 without PRP)
10	--	--	Not Used
11	0.5 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
12	0.5 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
13-22	--	--	Not Used
23	0.5 TN	126	Left Front Door Open Switch Signal
24	0.5 L-GN	66	A/C Request Signal (C60)
25-28	--	--	Not Used

Engine Control Module (ECM) X1 (LU3)



Connector Part Information

Harness Type: Engine

OEM Connector: 13580810

Service Connector: 88988931

Description: 73-Way F MX123 34566 Series (BK)

Terminal Part Information

Pins: 1, 2-3, 6, 8-11, 13, 15-21, 24-25, 27, 30, 32, 35, 37, 39, 41-45, 47, 50, 54-55, 57-58, 65-67, 70

Terminated Lead: Pins: 1, 6, 8, 18, 21, 25, 27, 30, 32, 41, 47, 50, 57, 65, 67 - 13575811

Terminated Lead:Pins: 2-3, 9-11, 13, 15-17, 19-20, 24, 35, 37, 39, 42-45, 54-55, 58, 61, 66, 70 - 13575575

Release Tool: J-38125-213

Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: Pins: 1, 6, 8, 18, 21, 25, 27, 30, 32, 41, 47, 50, 57, 65, 67 - 33467-0003/23

Terminal/Tray: Pins: 2-3, 9-11, 13, 15-17, 19-20, 24, 35, 37, 39, 42-45, 54-55, 58, 61, 66, 70 - 33467-0005/23

Core/Insulation Crimp: Pins: 1, 6, 8, 18, 21, 25, 27, 30, 32, 41, 47, 50, 57, 65, 67 - H/H

Core/Insulation Crimp:Pins: 2, 9-11, 15-17, 35, 37, 58 - K/K

Core/Insulation Crimp: Pins: 3, 13, 19-20, 24, 39, 42-45, 54-55, 61, 66, 70 - J/J

Pin 73

Terminated Lead: Service by Harness - See Part Catalog

Release Tool: J-38125-12A

Diagnostic Test Probe: J-35616-35 (VT)

Terminal/Tray: 1326030-8/17

Core/Insulation Crimp: A/4

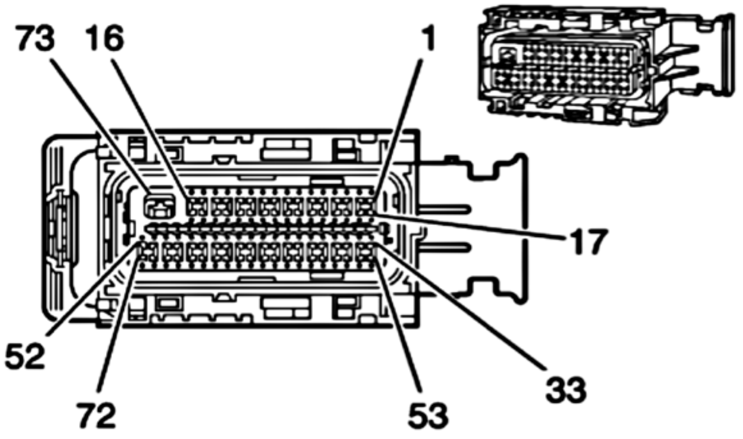
Pin	Wire	Circuit	Function
1	0.35 D-BU	1161	Accelerator Pedal Position (APP) Sensor 1 Signal
2	0.8 PU	1670	Heated Oxygen Sensor (HO2S) High Signal - Bank 2 Sensor 2
3	0.5 D-BU	5985	Accessory Wakeup Serial Data
4-5	--	--	Not Used
6	0.35 D-GN/WH	465	Fuel Pump Relay Control - Primary
7	--	--	Not Used
8	0.35 TN	5514	Low Reference (C60)
9	0.8 TN/WH	1669	Heated Oxygen Sensor (HO2S) Low Signal - Bank 1 Sensor 2
10	0.8 TN	1671	Heated Oxygen Sensor (HO2S) Low Signal - Bank 2 Sensor 2
11	0.5 BN	5360	Brake Apply Sensor Low Reference
12	--	--	Not Used
13	0.5 YE	5991	Powertrain Relay Control
14	--	--	Not Used
15	0.8 GY/WH	3122	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 1 Sensor 2
16	0.8 OG/WH	3223	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 2 Sensor 2

(continued on next page)

Engine Control Module (ECM) X1 (LU3) (cont d)

Pin	Wire	Circuit	Function
17	0.8 PU/WH	1668	Heated Oxygen Sensor (HO2S) High Signal - Bank 1 Sensor 2
18	0.35 L-BU	1162	Accelerator Pedal Position (APP) Sensor 2 Signal
19	0.5 PK	439	Ignition Voltage
20	0.5 RD/WH	440	Battery Positive Voltage
21	0.35 PU	1272	Low Reference
22-23	--	--	Not Used
24	0.5 TN/BK	6049	Low Reference
25	0.35 OG/BK	380	A/C Refrigerant Pressure Sensor Signal (C60)
26	--	--	Not Used
27	0.35 BN/WH	419	MIL Control
28-29	--	--	Not Used
30	0.35 D-GN/WH	459	A/C Compressor Clutch Relay Control (C60)
31	--	--	Not Used
32	0.35 YE/BK	625	Starter Enable Relay Control
33-34	--	--	Not Used
35	0.8 TN	2760	Low Reference
36	--	--	Not Used
37	0.5 YE	492	Mass Air Flow (MAF) Sensor Signal
38	--	--	Not Used
39	0.5 PU	1589	Fuel Level Sensor Signal - Primary
40	--	--	Not Used
41	0.35 BN	1271	Low Reference
42	0.5 D-GN	890	Fuel Tank Pressure Sensor Signal
43	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
44	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
45	0.5 WH	5359	Brake Apply Sensor Supply Voltage
46	--	--	Not Used
47	0.35 WH/BK	1164	5-Volt Reference 2
48-49	--	--	Not Used
50	0.35 YE/BK	1827	Vehicle Speed Signal
51-53	--	--	Not Used
54	0.5 OG/BK	6399	Replicated TOS Signal
55	0.5 L-BU/WH	6311	Torque Converter Clutch (TCC) Brake Signal
56	--	--	Not Used
57	0.35 OG/BK	1786	Park/Neutral Signal
58	0.5 TN	472	Intake Air Temperature (IAT) Sensor Signal
59-60	--	--	Not Used
61	0.5 YE	5361	Brake Apply Sensor Signal
62-64	--	-	Not Used
65	0.35 GY	2700	5-Volt Reference 1 (C60)
66	0.5 GY	2709	5-Volt Reference 1
67	0.35 TN	1274	5-Volt Reference 1
68-69	--	--	Not Used
70	0.5 WH	1310	Evaporative Emission (EVAP) Canister Vent Solenoid Control
71-72	--	--	Not Used
73	0.5 PK	1339	Ignition Voltage

Engine Control Module (ECM) X2 (LU3)



Connector Part Information

Harness Type: Engine

OEM Connector: 13580811

Service Connector: 88988372

Description: 73-Way F MX123 34566 Series (L-GY)

Terminal Part Information

Pins: 4-5, 6-13, 16, 20, 30-33, 35-41, 43, 45-46, 48-51, 53-54, 57-59, 65-66, 68, 70-71

Terminated Lead: Pins: 4-5, 6-13, 16, 20, 30-33, 35-39, 41, 43, 45-46, 48-51, 54, 58, 65-66, 68, 70-71 - 13575575

Terminated Lead: Pins: 40, 53, 57, 59 - 13575811

Release Tool: J-38125-213

Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: Pins: 4-5, 6-13, 16, 20, 30-33, 35-39, 41, 43, 45-46, 48-51, 54, 58, 65-66, 68, 70-71 - 33467-0005/23

Terminal/Tray: Pins: 40, 53, 57, 59 - 33467-0003/23

Core/Insulation Crimp: Pins: 4-5, 13, 20, 33, 35-39, 41, 45-46, 48-51, 54, 58, 65-66, 68, 70-71 - K/K

Core/Insulation Crimp: Pins: 6-12, 16, 22-24, 30-32, 43 - J/J

Core/Insulation Crimp: Pins: 40, 53, 57, 59 - H/H

Pin 73

Terminated Lead: Pending

Release Tool: J-38125-11A

Diagnostic Test Probe: J-35616-35 (VT)

Terminal/Tray: 7116-4152-02/9

Core/Insulation Crimp: A/5

Pin	Wire	Circuit	Function
1-3	--	--	Not Used
4	0.5 TN	2761	Low Reference
5	0.35 GY/BK	6272	Low Reference
6	0.5 TN	1744	Fuel Injector 1 Control
7	0.5 YE/BK	846	Fuel Injector 6 Control
8	0.5 TN/WH	845	Fuel Injector 5 Control
9	0.5 BN	2129	Low Reference
10	0.5 L-BU/BK	844	Fuel Injector 4 Control
11	0.5 PK/BK	1746	Fuel Injector 3 Control
12	0.5 L-GN/BK	1745	Fuel Injector 2 Control
13	0.5 GY	2704	5-Volt Reference 1
14-15	--	--	Not Used
16	0.5 YE	581	Throttle Actuator Control Motor Control - 1
17-19	--	--	Not Used
20	0.35 BN	6266	Low Reference
21	--	--	Not Used
22	0.5 PU	2121	Ignition Coil 1 Control
23	0.5 L-BU	2123	Ignition Coil 3 Control
24	0.5 OG/WH	2122	Ignition Coil 2 Control
25-29	--	--	Not Used
30	0.5 D-GN/WH	428	Evaporative Emission (EVAP) Canister Purge Solenoid Control

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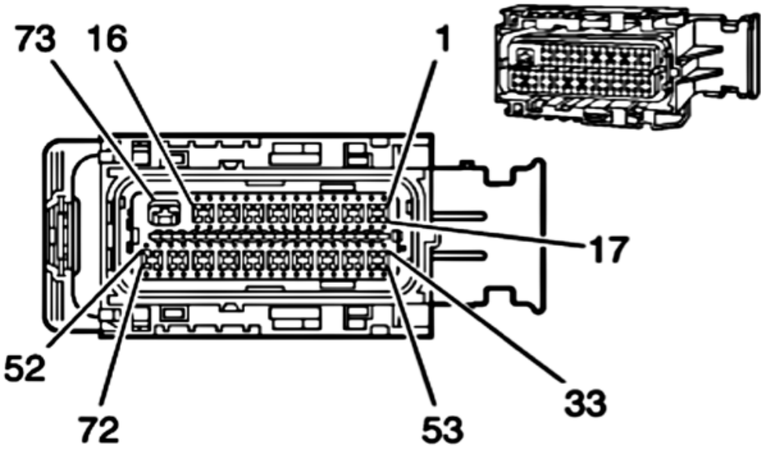
Engine Control Module (ECM) X2 (LU3) (cont d)

Pin	Wire	Circuit	Function
32	0.5 BN	582	Throttle Actuator Control Motor Control - 2
33	0.35 D-BU	6259	5-Volt Reference 1
34	--	--	Not Used
35	0.35 GY	2705	5-Volt Reference 1
36	0.35 TN/WH	331	Oil Pressure Sensor Signal
37	0.8 PU/WH	1665	Heated Oxygen Sensor (HO2S) High Signal - Bank 1 Sensor 1
38	0.8 PU	1666	Heated Oxygen Sensor (HO2S) High Signal - Bank 2 Sensor 1
39	0.5 L-GN	432	Manifold Absolute Pressure (MAP) Sensor Signal
40	0.35 TN	2752	Low Reference
41	0.35 BK	2755	Low Reference
42	--	--	Not Used
43	0.5 GY	23	Generator Field Duty Cycle Signal
44	--	--	Not Used
45	0.35 WH/BK	6271	Crankshaft Position (CKP) Sensor Signal
46	0.35 D-BU/ WH	6265	Camshaft Position (CMP) Sensor Signal
47	--	--	Not Used
48	0.8 TN	1664	Heated Oxygen Sensor (HO2S) Low Signal - Bank 1 Sensor 1
49	0.5 OG/BK	469	Low Reference
50	0.5 GY	1716	Knock Sensor (KS) 1 Signal
51	0.5 D-BU	496	Knock Sensor (KS) 1 Signal
52	--	--	Not Used
53	0.35 GY	2701	5-Volt Reference 2
54	0.35 PU/WH	6270	5-Volt Reference 2
55-56	--	--	Not Used
57	0.35 D-GN	485	Throttle Position (TP) Sensor 1 Signal
58	0.5 YE	410	Engine Coolant Temperature (ECT) Sensor Signal
59	0.35 PU	486	Throttle Position (TP) Sensor 2 Signal
60-64	--	--	Not Used
65	0.8 GY/WH	3113	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 1 Sensor 1
66	0.8 L-GN	3212	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 2 Sensor 1
67	--	--	Not Used
68	0.8 TN	1667	Heated Oxygen Sensor (HO2S) Low Signal - Bank 2 Sensor 1
69	--	--	Not Used
70	0.5 GY	2303	Knock Sensor (KS) 2 Signal
71	0.5 L-BU	1876	Knock Sensor (KS) 2 Signal

Engine Control Module (ECM) X1 (LC8, LMF, L20, or L96)



Connector Part Information
Harness Type: Engine
OEM Connector: 13580802
Service Connector: 88988931
Description: 73-Way F MX123 34566 Series (BK)

Terminal Part Information
Pins: 1, 9-13, 16, 18-20, 22-24, 27-34, 36-39, 41, 47, 49-50, 52, 56-57, 59, 61, 63-65, 68-69, 71
Terminated Lead: Pins: 1, 12-13, 23, 29-30, 32, 34, 36, 50, 52, 56-57, 63, 68 - 13575811
Terminated Lead: Pins: 9-11, 16, 18-20, 22, 24, 26-28, 31, 33, 37-39, 41-42, 47, 49, 54, 59, 61, 64-65, 69, 71 - 13575575
Release Tool: J-38125-213
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: Pins: 1, 12, 13, 23, 29, 30, 32, 34, 36, 50, 52, 56, 57, 63, 68 - 33467-0003/23
Terminal/Tray:Pins: 9-11, 16, 18-20, 22, 24, 26-28, 31, 33, 37-39, 41-42, 47, 49, 54, 59, 61, 64-65, 69, 71 - 33467-0005/23
Core/Insulation Crimp :Pins: 1, 12, 13, 23, 29, 30, 32, 34, 36, 50, 52, 56, 57, 63, 68 - H/H
Core/Insulation Crimp: Pins: 9, 16, 18-20, 24, 26-28, 31, 33, 47, 54, 59, 61, 71 - J/J
Core/Insulation Crimp: Pins: 10-11, 22, 37-39, 41-42, 49, 64-65, 69, 71 - K/K

Pins: 73
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: 7116-4152-02/9
Core/Insulation Crimp: A/5

Pin	Wire	Circuit	Function
1	0.5 OG/BK	1786	Park/Neutral Signal
2-8	--	--	Not Used
9	0.5 L-BU/WH	6311	Torque Converter Clutch (TCC) Brake Signal
10	0.8 PU/WH	1668	Heated Oxygen Sensor (HO2S) High Signal - Bank 1 Sensor 2
11	0.8 TN/WH	1669	Heated Oxygen Sensor (HO2S) Low Signal - Bank 1 Sensor 2
12	0.35 OG/BK	380	A/C Refrigerant Pressure Sensor Signal (C60)
13	0.35 TN	5514	Low Reference (C60)
14-15	--	--	Not Used
16	0.5 PU	1589	Fuel Level Sensor Signal - Primary
17	--	--	Not Used
18	0.5 D-BU	5985	Accessory Wakeup Serial Data
19	0.5 PK	439	Ignition Voltage
20	0.5 RD/WH	440	Battery Positive Voltage
21	--	--	Not Used
22	0.8 L-BU/BK	6813	Low Reference
23	0.35 PU	1272	Low Reference
24	0.5 D-GN	890	Fuel Tank Pressure Sensor Signal
25	--	--	Not Used
26	0.5 YE	5361	Brake Apply Sensor Signal

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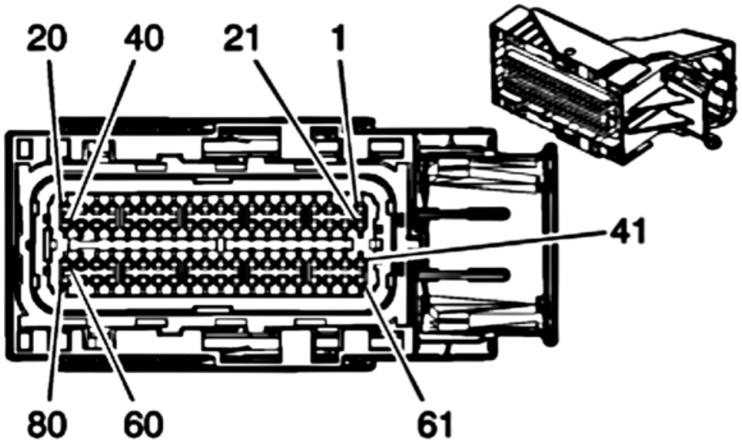
Engine Control Module (ECM) X1 (L20, LMF or L96) (cont d)

Pin	Wire	Circuit	Function
27	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
28	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
29	0.35 D-BU	1161	Accelerator Pedal Position (APP) Sensor 1 Signal
30	0.35 BN	1271	Low Reference
31	0.5 TN/BK	2759	Low Reference (L20 or L96)
	0.5 TN/BK	6049	Low Reference (LMF)
32	0.35 L-BU	1162	Accelerator Pedal Position (APP) Sensor 2 Signal
33	0.5 GY	2709	5-Volt Reference 1
34	0.35 GY	2700	5-Volt Reference 1 (C60)
35	--	--	Not Used
36	0.35 TN	1274	5-Volt Reference 1
37	0.5 TN/WH	472	Intake Air Temperature (IAT) Sensor Signal
38	0.8 TN	2760	Low Reference
39	0.8 L-GN	2032	Engine Coolant Temperature (ECT) Sensor Signal
40	--	--	Not Used
41	0.8 YE	492	Mass Air Flow (MAF) Sensor Signal
42	0.5 BN	5360	Brake Apply Sensor Low Reference
43-46	--	--	Not Used
47	0.5 PK	1339	Ignition Voltage
48	--	--	Not Used
49	0.8 TN	1671	Heated Oxygen Sensor (HO2S) Low Signal - Bank 2 Sensor 2
50	0.35 D-GN/WH	465	Fuel Pump Relay Control - Primary
51	--	--	Not Used
52	0.35 YE/BK	625	Starter Enable Relay Control
53	--	--	Not Used
54	0.5 WH	5359	Brake Apply Sensor Supply Voltage
55	--	--	Not Used
56	0.35 WH/BK	1164	5-Volt Reference 2
57	0.35 YE/BK	1827	Vehicle Speed Signal
58	--	--	Not Used
59	0.5 YE	5991	Powertrain Relay Control
60	--	--	Not Used
61	0.5 WH	1310	Evaporative Emission (EVAP) Canister Vent Solenoid Control
62	--	--	Not Used
63	0.35 D-GN/WH	459	A/C Compressor Clutch Relay Control (C60)
64	0.8 OG/WH	3223	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 2 Sensor 2
65	0.8 GY/WH	3122	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 1 Sensor 2
66-67	--	--	Not Used
68	0.35 BN/WH	419	MIL Control
69	0.8 PU	1670	Heated Oxygen Sensor (HO2S) High Signal - Bank 2 Sensor 2
70	--	--	Not Used
71	0.5 OG/BK	6399	Replicated TOS Signal

Engine Control Module (ECM) X2 (LC8, LMF, L20, or L96)



Connector Part Information

Harness Type: Engine

OEM Connector: 13536319

Service Connector: 19115670

Description: 80-Way F MX123 34566 Series (GY)

Terminal Part Information

Pins: 2, 5-6, 8, 12-13, 16-22, 26-27, 29-30, 32, 34, 37-41, 43-44, 50, 52-53, 56-61, 64, 66, 68-79

Terminated Lead: 13575575

Release Tool: J-38125-213

Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: 33467-0005/23

Core/Insulation Crimp: Pins: 2, 12-13, 16, 21-22, 26-27, 29-30, 34, 41, 43-44, 50, 52-53, 56-60, 64, 66, 68-79 - K/K

Core/Insulation Crimp: Pins: 5-6, 8, 17-20, 32, 37-40, 61 - J/J

Pins: 3, 35, 63, 65

Terminated Lead: 13575811

Release Tool: J-38125-213

Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: 33467-0003/23

Core/Insulation Crimp: H/H

Pin	Wire	Circuit	Function
1	--	--	Not Used
2	0.35 PU/WH	6270	5-Volt Reference 2
3	0.35 GY	2701	5-Volt Reference 2
4	--	--	Not Used
5	0.5 BN	582	Throttle Actuator Control Motor Control - 2
6	0.5 YE	581	Throttle Actuator Control Motor Control - 1
7	--	--	Not Used
8	0.5 D-GN/WH	428	Evaporative Emission (EVAP) Canister Purge Solenoid Control
9-11	--	--	Not Used
12	0.8 GY/WH	3113	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 1 Sensor 1
13	0.8 L-GN	3212	Heated Oxygen Sensor (HO2S) Heater Low Control - Bank 2 Sensor 1
14-15	--	--	Not Used
16	0.8 PU	5284	Camshaft Phaser Intake Solenoid (1) (L96)
17	0.5 D-BU/WH	878	Fuel Injector 8 Control
18	0.5 TN/WH	845	Fuel Injector 5 Control
19	0.5 YE/BK	846	Fuel Injector 6 Control
20	0.5 TN	1744	Fuel Injector 1 Control
21	0.5 YE	410	Engine Coolant Temperature (ECT) Sensor Signal
22	0.5 TN	2761	Low Reference
23-25	--	--	Not Used
26	0.8 D-BU	496	Knock Sensor (KS) 1 Signal
27	0.8 GY	1716	Knock Sensor (KS) 1 Signal

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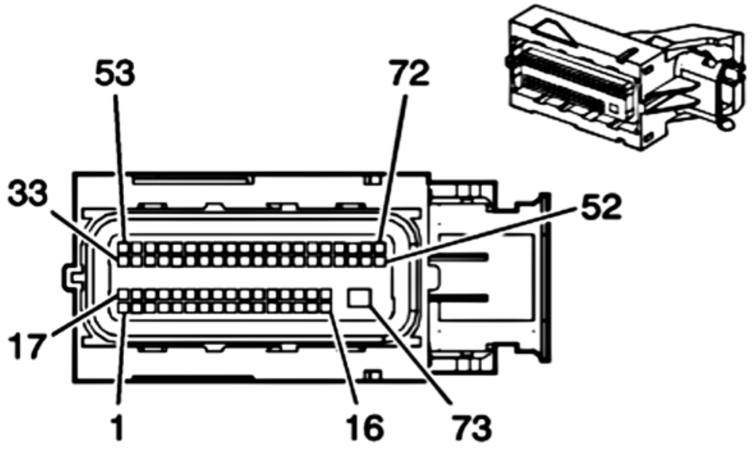
Engine Control Module (ECM) X2 (LC8, LMF, L20, or L96) (cont d)

Pin	Wire	Circuit	Function
28	--	--	Not Used
29	0.8 L-BU	1876	Knock Sensor (KS) 2 Signal
30	0.8 GY	2303	Knock Sensor (KS) 2 Signal
31	--	--	Not Used
32	0.5 GY	23	Generator Field Duty Cycle Signal
33	--	--	Not Used
34	0.35 BK	2755	Low Reference
35	0.35 TN	2752	Low Reference
36	--	--	Not Used
37	0.5 L-GN/BK	1745	Fuel Injector 2 Control
38	0.5 PK/BK	1746	Fuel Injector 3 Control
39	0.5 L-BU/BK	844	Fuel Injector 4 Control
40	0.5 OG/BK	877	Fuel Injector 7 Control
41	0.35 GY	2705	5-Volt Reference 1
42	--	--	Not Used
43	0.35 GY	2704	5-Volt Reference 1
44	0.35 D-BU	6259	5-Volt Reference 1
45-49	--	--	Not Used
50	0.35 TN/WH	331	Oil Pressure Sensor Signal
51	--	--	Not Used
52	0.8 TN	2199	Low Reference (L96)
53	0.35 OG/BK	469	Low Reference
54-55	--	--	Not Used
56	0.8 TN	1664	Heated Oxygen Sensor (HO2S) Low Signal - Bank 1 Sensor 1
57	0.8 PU/WH	1665	Heated Oxygen Sensor (HO2S) High Signal - Bank 1 Sensor 1
58	0.35 L-GN	432	Manifold Absolute Pressure (MAP) Sensor Signal
Pin	Wire	Circuit	Function
59	0.8 PU	1666	Heated Oxygen Sensor (HO2S) High Signal - Bank 2 Sensor 1
60	0.8 TN	1667	Heated Oxygen Sensor (HO2S) Low Signal - Bank 2 Sensor 1
61	0.5 OG	225	Generator Turn On Signal
62	--	--	Not Used
63	0.35 PU	486	Throttle Position (TP) Sensor 2 Signal
64	0.35 D-BU/WH	6265	Camshaft Position (CMP) Sensor Signal
65	0.35 D-GN	485	Throttle Position (TP) Sensor 1 Signal
66	0.35 BN	6266	Low Reference
67	--	--	Not Used
68	0.35 WH/BK	6271	Crankshaft Position (CKP) Sensor Signal
69	0.35 GY/BK	6272	Low Reference
70	0.8 PU	2121	Ignition Coil 1 Control
71	0.8 PU/WH	2128	Ignition Coil 8 Control
72	0.8 OG	2127	Ignition Coil 7 Control
73	0.8 OG/WH	2122	Ignition Coil 2 Control
74	0.8 L-BU/WH	2126	Ignition Coil 6 Control
75	0.8 D-GN	2125	Ignition Coil 5 Control
76	0.8 D-GN/WH	2124	Ignition Coil 4 Control
77	0.8 L-BU	2123	Ignition Coil 3 Control
78	0.8 BN	2129	Low Reference
79	0.8 BN/WH	2130	Low Reference
80	--	--	Not Used

Engine Control Module (ECM) X1 (LGH)



Connector Part Information

Terminal Part Information

Pin	Wire	Circuit	Function
1	0.8 BN/WH	3100	DEF Dosing Valve Low Control
2	0.8 BN	3099	DEF Dosing Valve High Control
3	0.5 D-BU	3105	DEF Smart Pump Control
4	0.5 D-GN/WH	465	Fuel Pump Primary Relay Control
5	0.5 YE/BK	625	Starter Enable Relay Control
6	0.8 D-GN	3101	DEF Reverting Valve High Control
7	0.5 BN/WH	6783	Low Reference
8	--	--	Not Available
9	0.5 L-BU/WH	6311	Cruise/ETC/TCC Brake Signal
10-13	--	--	Not Available
14	0.5 GY	2365	5 Volt Reference
15	0.5 GY/BK	2931	Low Reference
16	0.5 L-BU/WH	6288	Low Reference
17	0.5 BN/WH	419	Check Engine Indicator Control
18	0.5 PU	2927	Hydrocarbon Injector Low Control
19	0.5 WH/BK	2366	Cooling Fan Control Relay Speed Signal
20	0.5 D-BU	507	Wait To Start Indicator Control
21	0.5 WH/BK	2366	Cooling Fan Control Relay Speed Signal
22	0.5 TN	3657	Low Reference
23-24	--	--	Not Available
25	0.5 OG/BK	1786	Transmission Park/Neutral Signal
26	0.5 D-BU	5985	Accessory Wakeup Serial Data
27	0.5 TN	3661	Low Reference
28	0.5 TN	2759	Low Reference
29	0.5 BN	3108	DEF Pressure Sensor Signal
30	0.5 GY	3106	5 Volt Reference
31	0.5 TN	3107	Low Reference

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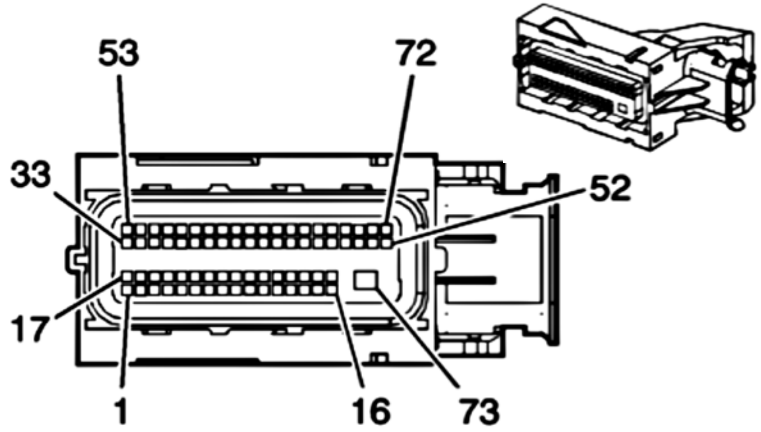
Engine Control Module (ECM) X1 (LGH) (cont d)

Pin	Wire	Circuit	Function
32	--	--	Not Available
33	0.5 D-BU	2926	Hydrocarbon Injector High Control
34	0.5 D-GN/WH	459	A/C Compressor Clutch Relay Control
35	0.5 TN	3104	Low Reference
36	0.5 TN	5514	Low Reference
37	--	--	Not Available
38	0.5 L-BU	5377	Exhaust Gas Temperature Sensor 2 Signal
39	0.5 L-BU	1162	Accelerator Pedal Position Signal 2
40	0.5 TN/BK	6289	Induction Air Temperature Sensor Signal
41	0.5 D-BU	6053	Exhaust Pressure Sensor Signal 1
42	0.5 WH/BK	1164	5 Volt Reference
43	0.5 GY	6054	5 Volt Reference
44	0.5 YE	6055	Low Reference
45	0.5 L-GN	7494	High Speed GMLAN Serial Data (-) (3)
46	0.5 TN	2501	High Speed GMLAN Serial Data (-) (1)
47	--	--	Not Available
48	0.5 PK	439	Run/Crank Ignition 1 Voltage
49	0.5 YE	492	Mass Air Flow Sensor Signal
50	0.8 OG	225	Generator Turn On Signal
51	0.5 PU	1272	Low Reference
52	--	--	Not Available
53	0.8 BK	3102	DEF Reverting Valve Low Control
54	0.5 GY	3103	DEF Smart Pump Supply Voltage
55	0.5 BN	1271	Low Reference
56	0.5 D-BU/WH	3660	Exhaust Gas Temperature Sensor 4 Signal
57	0.5 L-GN	5378	Exhaust Gas Temperature Sensor 3 Signal
58	0.5 PU	1589	Primary Fuel Level Sensor Signal
59	0.5 OG/BK	380	A/C Refrigerant Pressure Sensor Signal
60	--	--	Not Available
61	0.5 D-BU	1161	Accelerator Pedal Position Signal 1
62	0.5 TN	1274	5 Volt Reference
63	0.5 GY	2700	5 Volt Reference
64	--	--	Not Available
65	0.5 D-GN	7493	High Speed GMLAN Serial Data (+) (3)
66	0.5 TN/BK	2500	High Speed GMLAN Serial Data (+) (1)
67	0.5 RD/WH	440	Battery Positive Voltage
68	0.5 YE	5991	Powertrain Relay Coil Control
69	0.5 D-BU	2364	Cooling Fan Speed Signal
70	0.8 GY	23	Generator Field Duty Cycle Signal
71	0.5 BN/WH	6141	Low Reference
72	0.5 OG/BK	6399	Replicated TOS Signal

Engine Control Module (ECM) X2 (LGH)



Connector Part Information
Harness Type: Engine
OEM Connector: 12603596
Service Connector: 13574947
Description: 73-Way F MX123 34566 Series (BK)

Terminal Part Information
Pins: 3-10, 13-19, 21-22, 25, 27, 29-32, 41, 47, 66-67
Terminated Lead: 13575575
Release Tool: J-38125-213
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: 33467-0005/23
Core/Insulation Crimp: Pins: 3, 5-10, 22, 25, 27, 41, 47, 66-67 - J/J
Core/Insulation Crimp: Pins: 4, 13-19, 21, 29-32 - K/K

Pins: 73
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: 7116-4152-02/9
Core/Insulation Crimp: A/5

Pin	Wire	Circuit	Function
1-2	--	--	Not Available
3	0.5 YE	2928	Fuel Metering Valve High Control
4	0.8 PU/WH	2530	Fuel Rail Pressure Solenoid Supply Voltage
5	0.5 BK	2929	Fuel Metering Valve Low Control
6	0.5 WH	5931	Variable Nozzle Turbo Solenoid Low Signal
7	0.5 TN	2752	Low Reference
8	0.5 TN	2753	Low Reference
9	0.5 BN	1174	Oil Level Switch Signal
10	0.5 BN	6782	Low Reference
11-12	--	--	Not Available
13	0.8 BN/WH	4901	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 1
14	0.8 TN/WH	4907	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 7
15	0.8 L-BU	4804	Direct Fuel Injector (DFI) High Voltage Control Cylinder 4
16	0.8 BN	4801	Direct Fuel Injector (DFI) High Voltage Control Cylinder 1
17	0.8 BK/WH	451	Ground
18	0.8 BK/WH	451	Ground
19	0.8 YE	2834	Low Reference
20	--	--	Not Available
21	0.8 BK/WH	451	Ground
22	0.5 D-BU	5930	Variable Nozzle Turbo Solenoid High Signal
23-24	--	--	Not Available
25	0.5 OG/BK	5929	Low Reference
26	--	--	Not Available
27	0.5 YE/BK	1827	Vehicle Speed Signal

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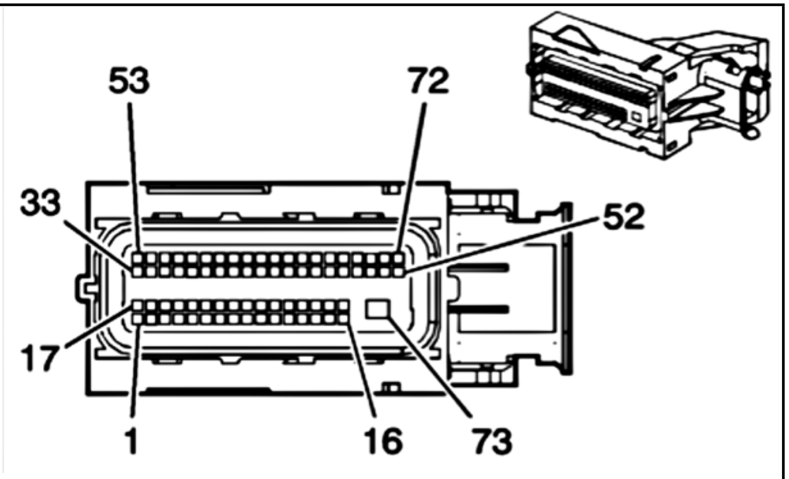
Engine Control Module (ECM) X2 (LGH) (cont d)

Pin	Wire	Circuit	Function
29	0.8 L-BU/WH	4904	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 4
30	0.8 PU/WH	4906	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 6
31	0.8 TN	4807	Direct Fuel Injector (DFI) High Voltage Control Cylinder 7
32	0.8 PU	4806	Direct Fuel Injector (DFI) High Voltage Control Cylinder 6
33-40	--	--	Not Available
41	0.5 BK	2755	Low Reference
42-46	--	--	Not Available
47	0.5 GY	2702	5 Volt Reference
48-65	--	--	Not Available
66	0.5 TN	5928	Variable Nozzle Turbo Position Sensor Voltage Reference
67	0.5 PU/WH	6270	5 Volt Reference
68-72	--	--	Not Available
73	3 BK/WH	451	Ground

Engine Control Module (ECM) X3 (LGH)



Connector Part Information

Harness Type: Engine Chassis
OEM Connector: 12603597
Service Connector: 13574948
Description: 73-Way F MX123 34566 Series (GY)

Terminal Part Information

Pins: 2, 4, 6-7, 9-21, 24, 27-32, 36-38, 40, 44, 46, 48-52, 54-57, 60-61, 65-72
Terminated Lead: 13575575
Release Tool: J-38125-213
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: 33467-0005/23
Core/Insulation Crimp: Pins: 2, 4, 6-7, 9-14, 15-21, 24, 27-32, 36-38, 40, 44, 46, 48, 54-55, 60-61, 65-68 - J/J
Core/Insulation Crimp: Pins: 49-52, 56-57, 69-72 - K/K
Pin 73
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-35 (VT)
Terminal/Tray: 7116-4152-02/9
Core/Insulation Crimp: A/5

Pin	Wire	Circuit	Function
1	--	--	Not Available
2	0.5 BU/YE	6861	Water In Fuel Sensor Signal
3	--	--	Not Available
4	0.5 TN/WH	331	Oil Pressure Sensor Signal
5	0.5 YE	5361	Brake Apply Sensor Signal
6	0.5 PU/WH	7584	Exhaust Gas Recirculation Temperature Sensor 1 Supply Voltage
7	0.5 D-BU	7583	Exhaust Gas Recirculation Temperature Sensor 2 Supply Voltage
8	--	--	Not Available
9	0.5 BN/WH	5763	Exhaust Gas Recirculation Valve Sensor Signal
10	0.5 YE	5947	Variable Nozzle Turbo Position Sensor Signal
11	0.5 YE	1578	Fuel Temperature Signal
12	0.5 BN	3681	Charge Air Cooler Outlet Temperature Sensor Signal
13	0.5 TN	3680	Charge Air Cooler Outlet Temperature Sensor Return
14	0.5 TN	2917	5 Volt Reference
15	0.5 WH	5359	Brake Apply Sensor Supply Voltage
16	0.5 GY	2704	5 Volt Reference
17	0.5 D-BU	6863	Low Reference
18	0.5 D-BU	5277	Exhaust Gas Temperature Sensor 1 Signal
19	0.5 D-GN	485	Throttle Position Sensor Signal 1
20	0.5 YE	2918	Fuel Rail Pressure Sensor Signal
21	0.5 L-GN	432	Manifold Absolute Pressure Sensor Signal

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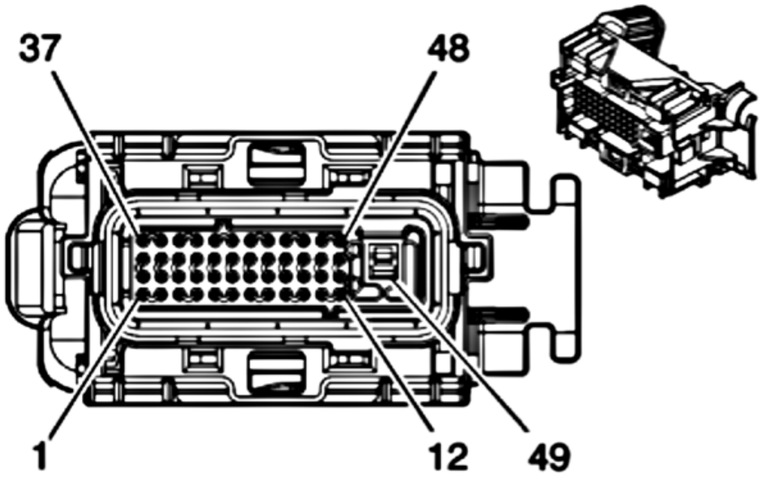
Engine Control Module (ECM) X3 (LGH) (cont d)

Pin	Wire	Circuit	Function
24	0.5 YE	410	Engine Coolant Temperature Sensor Signal
25-26	--	--	Not Available
27	0.5 BN/GY	7072	Sensor Fuel Temperature 1 Signal
28	0.5 D-GN	3683	Charge Air Cooler Inlet Temperature Sensor Signal
29	0.5 TN/BK	3682	Charge Air Cooler Inlet Temperature Sensor Return
30	0.5 GY	2705	5 Volt Reference
31	0.5 D-BU	6259	5 Volt Reference
32	0.5 GY	2701	5 Volt Reference
33-35	--	--	Not Available
36	0.5 OG/BK	2919	Low Reference
37	0.5 OG/BK	469	Low Reference
38	0.5 BN	5360	Brake Apply Sensor Low Reference
39	--	--	Not Available
40	0.5 TN	2761	Low Reference
41-43	--	--	Not Available
44	0.5 GY/BK	5765	Fuel Filter Pressure Switch Signal
45	--	--	Not Available
46	0.5 BN/WH	7073	Sensor Fuel Temperature 1 Return
47	--	--	Not Available
48	0.5 BN	6062	Low Reference
49	0.8 GY/WH	4908	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 8
50	0.8 D-BU/WH	4902	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 2
51	0.8 D-BU	4802	Direct Fuel Injector (DFI) High Voltage Control Cylinder 2
52	0.8 L-BU	4805	Direct Fuel Injector (DFI) High Voltage Control Cylinder 5
53	--	--	Not Available
54	0.5 L-GN/BK	5746	Exhaust Gas Recirculation Valve Motor Low Signal
55	0.5 OG/BK	5764	Exhaust Gas Recirculation Valve Motor High Signal
56	0.8 BN	582	Throttle Actuator Control Close
57	0.8 YE	581	Throttle Actuator Control Open
58-59	--	--	Not Available
60	0.5 GY/BK	6272	Low Reference
61	0.5 WH/BK	6271	CKP Sensor Signal
62-64	--	--	Not Available
65	0.5 D-BU/WH	6265	CMP Sensor Signal
66	0.5 BN	6266	Low Reference
67	0.5 BN	6274	Low Reference
68	0.5 WH	6275	Low Reference
69	0.8 D-GN/WH	4903	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 3
70	0.8 L-GN/WH	4905	Direct Fuel Injector (DFI) High Voltage Supply Cylinder 5
71	0.8 D-GN	4803	Direct Fuel Injector (DFI) High Voltage Control Cylinder 3

Transmission Control Module (TCM) (M30)



Connector Part Information

Harness Type: Engine

OEM Connector: 15463921

Service Connector: 88987979

Description: 49-Way F GT 280 Micro-Pack 64 Series, Sealed (BK)

Terminal Part Information

Pins: 1-3, 5-7, 11, 15-17, 19-20, 23, 25, 29-32, 35, 37-42, 45-46

Terminated Lead: Pins: 1-2, 5-7, 11, 15-16, 19-20, 25, 31, 37-38, 41-42 - 13575528

Terminated Lead: Pins: 3, 17, 23, 29-30, 32, 35, 39-40, 45-46 - Pending

Release Tool: J-38125-21

Diagnostic Test Probe: J-35616-64B (L-BU)

Terminal/Tray: 15359541/4

Core/Insulation Crimp: M/M

Pin 49

Terminated Lead: 13575386

Release Tool: J-38125-553

Diagnostic Test Probe: J-35616-4A (PU)

Terminal/Tray: 15392777/23

Core/Insulation Crimp: D/5

Pin	Wire	Circuit	Function
1	0.5 BN	418	Torque Converter Clutch Pulse Width Modulation (TCC PWM) Solenoid Valve Control
2	0.5 L-GN	1222	Shift Solenoid A Valve Control
3	0.5 OG/BK	1230	Automatic Transmission Input Speed Sensor (AT ISS) High Signal
4	--	--	Not Used
5	0.5 OG/BK	6399	Replicated TOS Signal
6	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
7	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
8-10	--	--	Not Used
11	0.5 D-BU	5985	Accessory Wakeup Serial Data
12-14	--	--	Not Used
15	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
16	0.5 L-GN/BK	822	Vehicle Speed Sensor (VSS) Low Signal
17	0.35 L-BU/WH	1229	PC Solenoid Valve Low Control (Sol. A)
18	--	--	Not Used
19	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
20	0.5 YE/BK	1223	Shift Solenoid B Valve Control
21-22	--	--	Not Used
23	0.35 GY	773	Transmission Range Switch Signal C
24	--	--	Not Used

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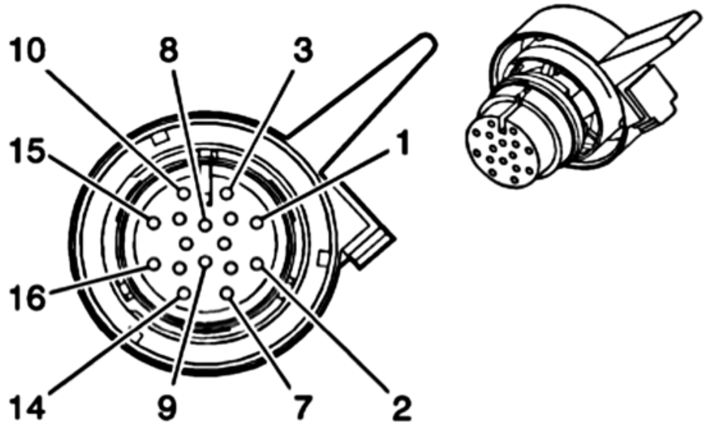
Transmission Control Module (TCM) (M30) (cont d)

Pin	Wire	Circuit	Function
26-28	--	--	Not Used
29	0.35 TN/WH	771	Transmission Range Switch Signal A
30	0.35 TN	452	Low Reference
31	0.5 PK	2139	Ignition Voltage
32	0.35 RD/WH	1840	Battery Positive Voltage
33-34	--	--	Not Used
35	0.35 YE/BK	1227	Transmission Fluid Temperature (TFT) Sensor Signal
36	--	--	Not Used
37	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
38	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
39	0.35 WH	776	Transmission Range Switch Signal P

Pin	Wire	Circuit	Function
40	0.35 OG/BK	1228	PC Solenoid Valve High Control (Sol. A)
41	0.5 PU/WH	821	Vehicle Speed Sensor (VSS) High Signal
42	0.5 L-BU/WH	6311	Torque Converter Clutch (TCC) Brake Signal
43-44	--	--	Not Used
45	0.35 D-BU/WH	1231	Low Reference
46	0.35 YE	772	Transmission Range Switch Signal B
47-48	--	--	Not Used

Control Solenoid Valve Assembly X1 (MYD)

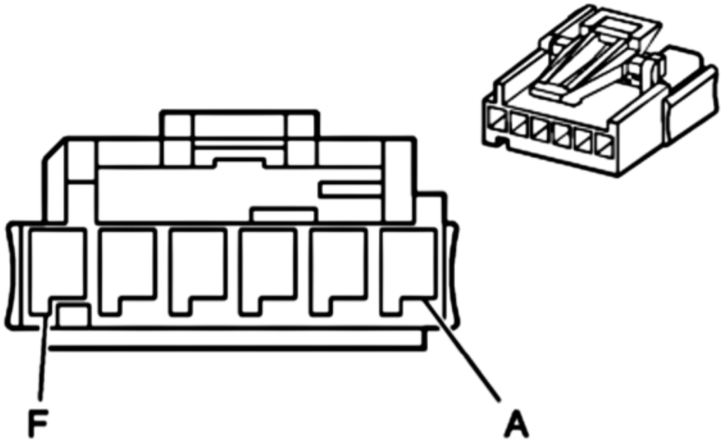


Connector Part Information
Harness Type: Engine (L20 or L96)
Harness Type: Transmission Jumper (LGH)
OEM Connector: 15491328
Service Connector: 15131300
Description: 16-Way F 1.5 Series, Sealed (BK)

Terminal Part Information
Terminated Lead: 13578934
Release Tool: J-38125-28
Diagnostic Test Probe: J-35616-66 (YE)
Terminal/Tray: 2 21 24 47220 0/12
Core/Insulation Crimp: E/1

Pin	Wire	Circuit	Function
1	0.35 RD/WH	1840	Battery Positive Voltage (LGH)
2	0.8 BK/WH	1551	Ground (LGH)
3	0.5 OG/BK	1786	Park/Neutral Signal
4	0.35 RD/WH	1840	Battery Positive Voltage (L20 or L96)
5	0.8 BK/WH	1551	Ground (L20 or L96)
6	0.5 L-BU/WH	6311	Brake Switch Signal
7	--	--	Not Used
8	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
9	0.5 D-BU	5985	Accessory Wakeup Serial Data
10	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
11	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
12	0.5 PK	2139	Ignition 1 Voltage
13	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
14	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
15	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
16	0.5 OG/BK	6399	Replicated TOS Signal

Control Solenoid Valve Assembly X2 (MYD)



Connector Part Information

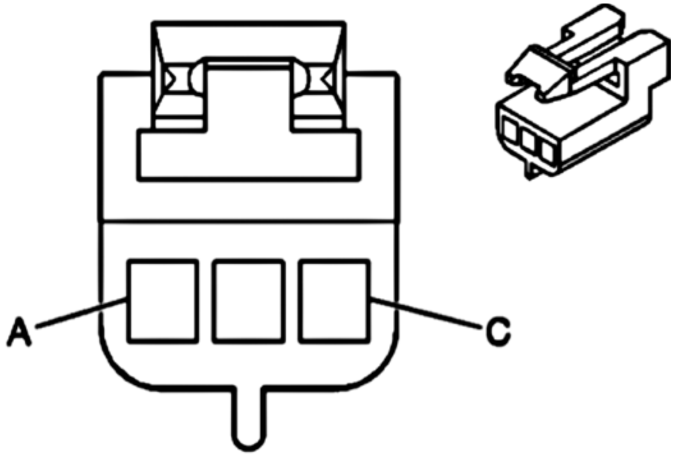
Harness Type: Automatic Transmission
OEM Connector: 15336500
Service Connector: 89046635
Description: 6-Way F Metri-Pack 150.2 Series (GN)

Terminal Part Information

Terminated Lead: Service by Connector Assembly - 89046635
Release Tool: Not Available
Diagnostic Test Probe: Not Available
Terminal/Tray: Not Available
Core/Insulation Crimp: Not Available

Pin	Wire	Circuit	Function
A	GY	--	Ground
B	BK	--	Transmission Range Switch Signal P
C	YE	--	Transmission Range Switch Signal C
D	RD	--	Transmission Range Switch Signal B
E	GN	--	Transmission Range Switch Signal A
F	WH	--	Park/Neutral Switch Signal

Control Solenoid Valve Assembly X3 (MYD)



Connector Part Information

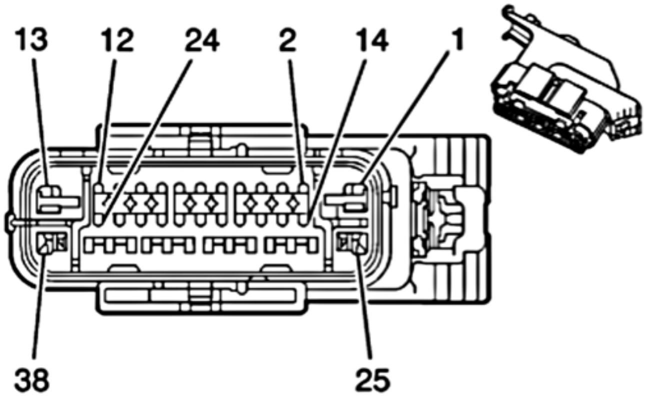
Harness Type: Automatic Transmission
OEM Connector: 12064758
Service Connector: 12117320
Description: 3-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

Terminated Lead: Service by Connector Assembly - 12117320
Release Tool: Not Available
Diagnostic Test Probe: Not Available
Terminal/Tray: Not Available
Core/Insulation Crimp: Not Available

Pin	Wire	Circuit	Function
A	GN	--	Input Speed Sensor (ISS) Signal
B	RD	--	8-Volt Reference
C	BK	--	Output Speed Sensor (OSS) Signal

Electronic Brake Control Module (EBCM) (JL4)



Connector Part Information

Harness Type: Chassis

OEM Connector: 13528146

Service Connector: 19178085

Description: 38-Way F 2.8 Series, Sealed (BK)

Terminal Part Information

Pins: 1, 13
Terminated Lead: 13578926
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-42 (RD)
Terminal/Tray: 7116-4142-02/10
Core/Insulation Crimp: D/3

Pins: 2-9, 12, 16-17, 19-21, 23-24, 28-33, 36-37
Terminated Lead: 13578883
Release Tool: J-38125-215A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SAITS-A03T-M064/14
Core/Insulation Crimp: 9/9

Pin: 25
Terminated Lead: 13575408
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15392777/23
Core/Insulation Crimp: D/5

Pin: 38
Terminated Lead: 13575403
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 13575403/19
Core/Insulation Crimp: 4/5

Pin	Wire	Circuit	Function
1	5 BK	2150	Ground
2	0.5 WH	883	Low Reference
3	0.5 BN	882	Right Rear Wheel Speed Sensor Signal
4	0.5 TN	884	Left Rear Wheel Speed Sensor Signal
5	0.5 OG	885	Low Reference
6	0.5 TN	833	Low Reference
7	0.5 YE	6046	Steering Angle Sensor Phase A
8	0.5 TN	6048	Steering Angle Sensor Phase C
9	0.5 L-GN	6043	Steering Angle Sensor Signal
10-11	--	--	Not Used
12	0.5 L-BU	5986	Serial Data Communication Enable
13	5 RD/BK	442	Battery Positive Voltage
14-15	--	--	Not Used
16	0.5 OG/BK	6045	Low Reference
17	0.5 D-GN	872	Right Front Wheel Speed Sensor Signal
18	--	--	Not Used
19	0.5 GY/BK	1337	12-Volt Reference
20	0.5 D-BU	6047	Steering Angle Sensor Phase B
21	0.5 WH/BK	6436	CAN Bus Low Terminated Serial Data
22	--	--	Not Used

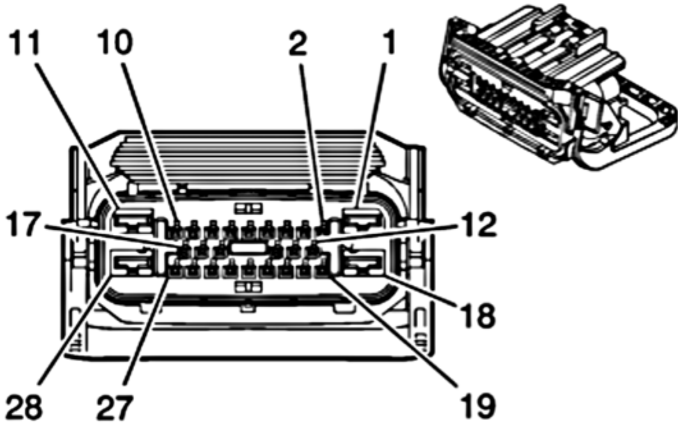
(continued on next page)

Electronic Brake Control Module (EBCM) (JL4) (cont d)

Pin	Wire	Circuit	Function
23	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
24	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
25	3 BK	2150	Ground
26-27	--	--	Not Used
28	0.5 L-BU	830	Left Front Wheel Speed Sensor Signal
29	0.5 YE	873	Low Reference
30	0.5 BK/PU	7499	Low Reference

Pin	Wire	Circuit	Function
31	0.5 GY	6044	5-Volt Reference
32	0.5 YE/BK	1827	Vehicle Speed Signal
33	0.5 BN/WH	6437	CAN Bus High Terminated Serial Data
34-35	--	--	Not Used
36	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
37	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
38	3 RD/WH	1640	Battery Positive Voltage

Electronic Brake Control Module (EBCM) (without JL4)



Connector Part Information

Harness Type: Chassis

OEM Connector: 13628862

Service Connector: 19149286

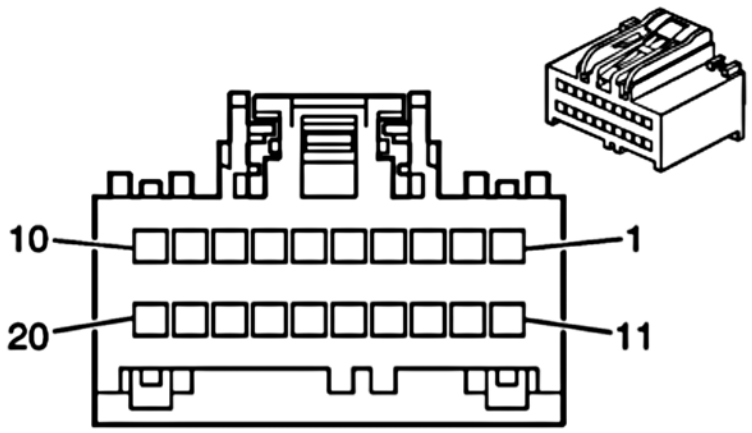
Description: 28-Way F 0.64/6.3 Series, Sealed (BK)

Terminal Part Information
Pins: 1, 11, 18, 28
Terminated Lead: Pins: 1, 11 - Pending
Terminated Lead: Pins: 18, 28 - 13575383
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-42 (RD)
Terminal/Tray: 7116-4142-02/10
Core/Insulation Crimp: Pins: 1, 11 - A/3
Core/Insulation Crimp: Pins:18, 28 - D/3

Pins: 2-3, 12-13, 15-16, 19-20, 26-27
Terminated Lead: 13575378
Release Tool: J-38125-215A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SAITS-A03T-M064/14
Core/Insulation Crimp: 9/9

Pin	Wire	Circuit	Function
1	3 RD/WH	1640	Battery Positive Voltage
2	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
3	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus (+)
4-10	--	--	Not Used
11	3 BK	2150	Ground
12	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
13	0.5 TN	2501	High Speed GMLAN Serial Data Bus (-)
14	--	--	Not Used
15	0.5 L-BU	830	Left Front Wheel Speed Sensor Signal
16	0.5 YE	873	Low Reference
17	--	--	Not Used
18	5 RD/BK	442	Battery Positive Voltage
19	0.5 L-BU	5986	Serial Data Communication Enable
20	0.5 YE/BK	1827	Vehicle Speed Signal
21-25	--	--	Not Used
26	0.5 D-GN	872	Right Front Wheel Speed Sensor Signal
27	0.5 TN	833	Low Reference
28	5 BK	2150	Ground

Instrument Panel Cluster (IPC)



Connector Part Information

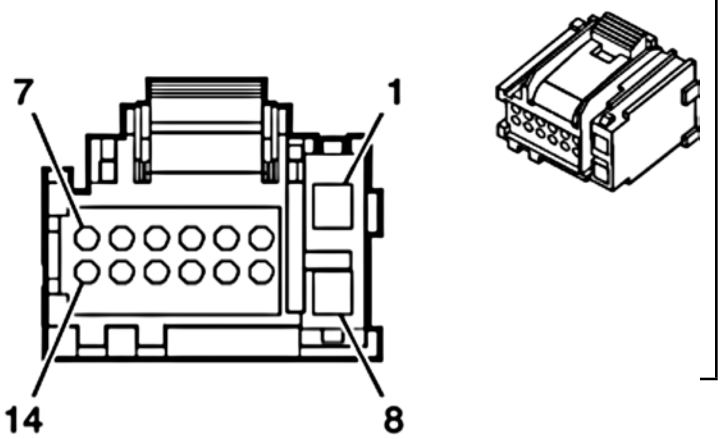
Harness Type: Instrument Panel
OEM Connector: 15489824
Service Connector: 15126711
Description: 20-Way F 64 Series (BK)

Terminal Part Information

Terminated Lead: 13575845
Release Tool: J-38125-215A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SAIT-A03T-M064/14
Core/Insulation Crimp: P/P

Pin	Wire	Circuit	Function
1	0.35 D-GN	5060	Low Speed GMLAN Serial Data
2	--	--	Not Used
3	0.5 L-GN	1478	Coolant Level Switch Signal (LMM or LGH)
4	0.35 BN/WH	419	MIL Control
5	0.35 PU	5234	Passenger Seat Belt Indicator (Light Duty without YF7)
6	--	--	Not Used
7	0.35 BK/WH	351	Ground
8	--	--	Not Used
9	0.35 D-BU	507	Wait to Start Indicator Control (LMM or LGH)
10	0.5 D-GN/WH	636	Ambient Air Temperature Sensor Signal (UFA)
11	0.5 YE	61	Low Reference (UFA)
12	0.35 D-BU	2307	Passenger Air Bag On Indicator Control (Light Duty without YF7)
13	0.35 D-GN	2308	Passenger Air Bag Off Indicator Control (Light Duty without YF7)
14	0.5 TN/WH	33	Brake Warning Indicator Control
15	0.5 PU	333	Brake Fluid Level Sensor Signal
16	0.35 PK	893	Driver Information Center (DIC) Select Menu Switch Signal
17	0.35 D-GN/WH	1358	Driver Information Center (DIC) Switch Signal
18	0.35 BN	897	Low Reference
19	0.35 PK	1639	Ignition Voltage
20	0.35 RD/WH	2840	Battery Positive Voltage

Radio X1

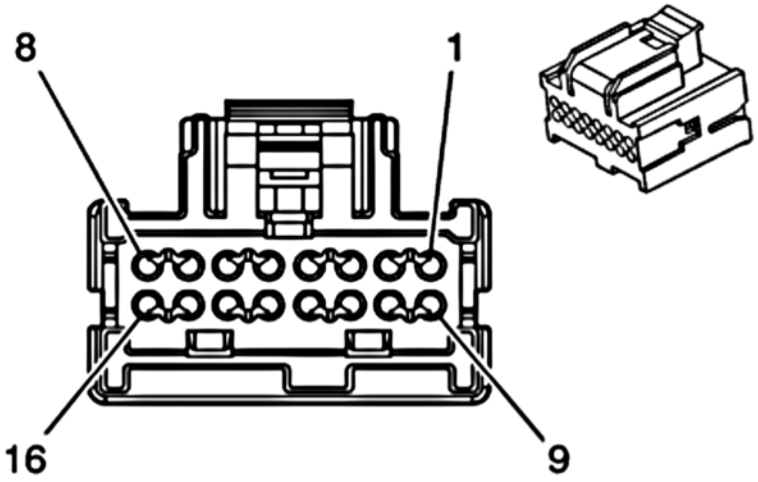


Connector

Terminal P

Pin	Wire	Circuit	Function
1	1 RD/WH	340	Battery Positive Voltage
2	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
3	0.8 OG	1853	Right Front Midrange Speaker Output (+)
4-6	--	--	Not Used
7	0.35 YE	6817	LED Backlight Dimming Control
8	1 BK/WH	351	Ground
9	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
10	0.8 D-GN	1953	Right Front Midrange Speaker Output (-)
11-12	--	--	Not Used
13	0.35 D-GN	5060	Low Speed GMLAN Serial Data
14	--	--	Not Used

Radio X2

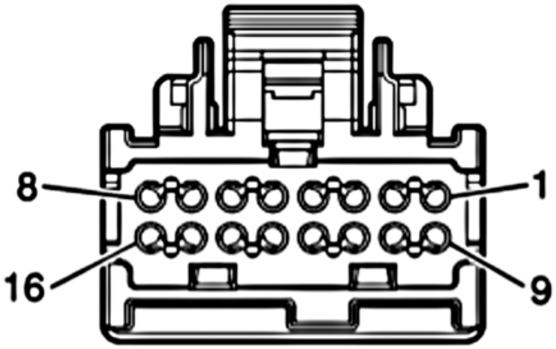


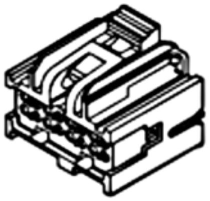
Connector Part Information
Harness: Instrument Panel
OEM: 13567860
Service: 13504130
Description: 16-Way F Micro-Pack 0.64 Series (PU)

Terminal Part Information
Pins: 1-2, 5-7, 9-10, 13-15
Terminal/Tray: 15359541/4
Core/Insulation Crimp: M/M
Release Tool/Test Probe: J-38125-21/J-35616-64B (L-BU)

Pin	Wire	Circuit	Function
1	0.35 BN/WH	367	Left Audio Signal (+) (U2K)
2	0.35 D-GN/ WH	368	Right Audio Signal (+) (U2K)
3-4	--	--	Not Used
5	0.8 TN	1859	Left Rear Midrange Speaker Output (+)
6	0.8 TN	1855	Right Rear Midrange Speaker Output (+)
7	0.8 D-BU	658	Cellular Telephone Voice Signal (UE1)
8	--	--	Not Used
9	0.35 TN/WH	372	Left Audio Signal (-) (U2K)
10	0.35 GY	388	Right Audio Signal (-) (U2K)
11-12	--	--	Not Used
13	0.8 WH	1959	Left Rear Midrange Speaker Output (-)
14	0.8 OG	1955	Right Rear Midrange Speaker Output (-)
15	0.8 L-BU/BK	659	Low Reference (UE1)
16	--	--	Not Used

Digital Radio Receiver (U2K)



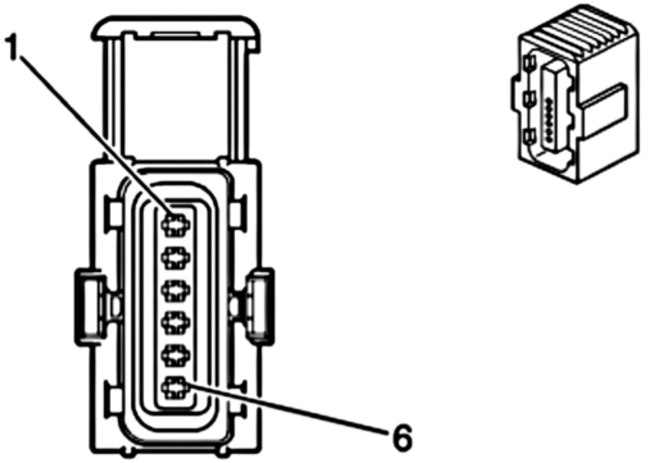


Connector Part Information
Harness: Instrument Panel
OEM: 13568238
Service: 13504130
Description: 16-Way F Micro 64 Series Sealed (BK)

Terminal Part Information
Pins: 1-5, 9,16
Terminal/Tray: 15359541/4
Core/Insulation Crimp: M/M
Release Tool/Test Probe: J-38125-21/J-35616-64B (L-BU)

Pin	Wire	Circuit	Function
1	0.35 TN/WH	372	Left Audio Signal (-)
2	0.35 BN/WH	367	Left Audio Signal (+)
3	0.35 D-GN/ WH	368	Right Audio Signal (+)
4	0.35 GY	388	Right Audio Signal (-)
5	0.5 D-GN	5060	Low Speed GMLAN Serial Data
6-8	--	--	Not Used
9	0.8 BK/WH	351	Ground
10-15	--	--	Not Used
16	0.8 RD/WH	340	Battery Positive Voltage

Accelerator Pedal Position (APP) Sensor

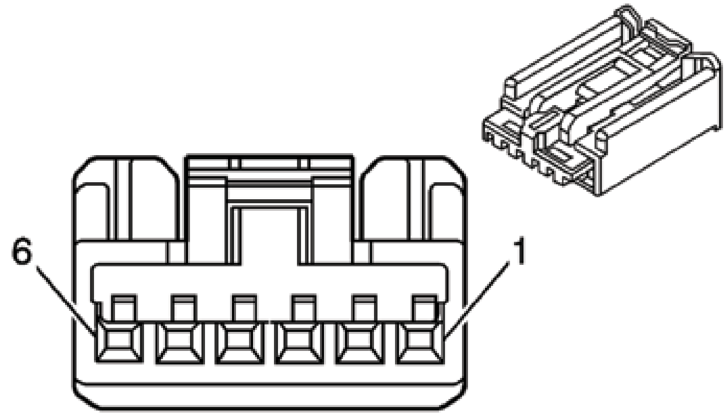


Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15383136
Service Connector: 13580116
Description: 6-Way F Sealed (BK)

Terminal Part Information
Terminated Lead: 13575385
Release Tool: J-38125-560
Diagnostic Test Probe: J-35616-14 (GN)
Terminal/Tray: 4-969005-1/16
Core/Insulation Crimp: E/1

Pin	Wire	Circuit	Function
1	0.35 TN	1274	5-Volt Reference
2	0.35 WH/BK	1164	5-Volt Reference
3	0.35 D-BU	1161	Accelerator Pedal Position (APP) Sensor 1 Signal
4	0.35 BN	1271	Low Reference
5	0.35 PU	1272	Low Reference
6	0.35 L-BU	1162	Accelerator Pedal Position (APP) Sensor 2 Signal

Brake Pedal Position (BPP) Sensor

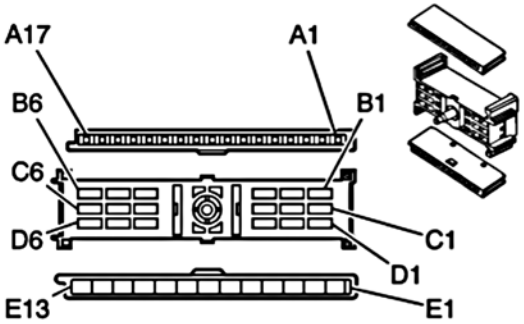


Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 13595476
Service Connector: 19167753
Description: 6-Way F AIT II Series (BK)

Terminal Part Information
Terminated Lead: 13575867
Release Tool: J-38125-215A
Diagnostic Test Probe: J-35616-64B (L-BU)
Terminal/Tray: SAIT-A03T-M064/14
Core/Insulation Crimp: P/P

Pin	Wire Color	Circuit No.	Function
1	0.5 BN	5382	Brake Position Sensor Low Reference
2	0.5 GY	5381	Brake Position Sensor 5 Volt Reference
3	0.5 TN	5380	Brake Position Sensor Signal
4	0.5 YE	5361	Brake Apply Sensor Signal
5	0.5 BN	5360	Brake Apply Sensor Low Reference
6	0.5 WH	5359	Brake Apply Sensor Supply Voltage

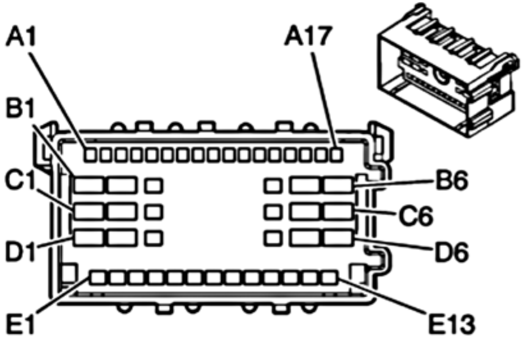
X200 Steering Column Harness to Instrument Panel Harness



Connector Part Information
OEM Connector: 12047842
Service Connector: 12047842
Description: 17-Way F Metri-Pack 280 Series (BK)
OEM Connector: 15492581
Service Connector: 12084183
Description: 18-Way F Metri-Pack 280 630 Series Unsealed (BK)
OEM Connector: 12047840
Service Connector: 12047840
Description: 13-Way F Metri-Pack 280 Series (BK)

Terminal Part Information
Pins: A1, A3, A6, A9, A11-A17
Terminated Lead: 13575464
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-14 (GN)
Terminal/Tray: 15326030/5
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5-D6
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-42 (RD)
Terminal/Tray: 12015869/3
Core/Insulation Crimp: E/A



Connector Part Information
Harness Type: Instrument Panel
OEM Connector: 15492579
Service Connector: 88988982
Description: 48-Way M Metri-Pack 150 280 630 Series (BK)

Terminal Part Information
Pins: A1, A3, A6, A9, A11-A17
Terminated Lead: 13575462
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 12047581/2
Core/Insulation Crimp: E/C

Pins: B3, C3, D3, D4, E1, E3, E4, E8, E9, E10-E13
Terminated Lead: 13575463
Release Tool: J-38125-12A
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 12047581/2
Core/Insulation Crimp: E/C

Pins: B1, B6, C1, C6, D1, D5, D6
Terminated Lead: Service by Harness - See Part Catalog
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-43 (RD)
Terminal/Tray: 12020126/2
Core/Insulation Crimp: E/A

(continued on next page)

X200 Steering Column Harness to Instrument Panel Harness (cont d)

Pins: B3, C3, D3-D4, E1, E3-E4, E8-E13
Terminated Lead: Pending
Release Tool: J-38125-11A
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 12034046/2
Core/Insulation Crimp: E/A

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.35 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/ WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.35 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.35 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal

Pin	Wire	Circuit	Function
A1	0.35 TN	28	Horn Relay Control
A2	--	--	Not Used
A3	0.35 PK	1444	12-Volt Reference (K34)
A4-A5	--	--	Not Used
A6	0.35 PK	2239	Ignition Voltage
A7-A8	--	--	Not Used
A9	0.35 PK	3	Ignition Voltage
A10	--	--	Not Used
A11	0.35 L-GN	6818	Steering Wheel Control Signal (W1Y)
A12	0.5 YE	6046	Steering Angle Sensor Phase A (JL4)
A13	0.35 D-GN/ WH	7158	Cruise Control Indicator Dimming Signal (K34)
A14	0.5 D-BU	6047	Steering Angle Sensor Phase B (JL4)
A15	0.35 BN	6136	Supply Voltage (K34/W1Y)
A16	0.5 TN	6048	Steering Angle Sensor Phase C (JL4)
A17	0.35 GY	1884	Cruise Control Switch Signal (K34)
B1	0.35 RD/WH	540	Battery Positive Voltage
B2	--	--	Not Used
B3	0.35 WH	111	Theft Deterrent Alarm Enable Signal
B4-B5	--	--	Not Used
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal

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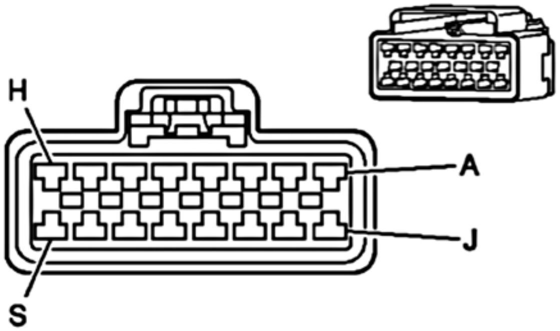
X200 Steering Column Harness to Instrument Panel Harness (cont d)

B4-B5	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
B6	0.35 PK	1020	Ignition Voltage
C1	0.35 WH	530	Ignition Voltage
C2	--	--	Not Used
C3	0.35 YE	307	Headlamp Switch Flash to Pass Signal
C4-C5	--	--	Not Used
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.35 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.35 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.35 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

C4-C5	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
C6	0.35 BN	4	Ignition Voltage
D1	0.35 TN/BK	6009	Low Reference
D2	--	--	Not Used
D3	0.35 YE	525	Headlamp Dimmer Switch Low Beam Signal
D4	0.5 TN/WH	816	A/T Shift Lock Solenoid Control
D5	0.5 L-GN	6043	Steering Angle Sensor Signal (JL4)
D6	0.35 PK	94	Windshield Washer Switch Signal
E1	0.5 BK	350	Ground
E2	--	--	Not Used
E3	0.5 BK/WH	351	Ground
E4	0.5 OG/BK	6045	Low Reference (JL4)
E5-E7	--	--	Not Used
E8	0.35 D-GN	663	Hazard Switch Left Turn Signal
E9	0.35 TN	664	Hazard Switch Turn Right Signal
E10	0.5 GY	6044	5-Volt Reference (JL4)
E11	0.35 L-BU	1714	Windshield Wiper Switch Low Signal
E12	0.35 L-GN	1715	Windshield Wiper Switch High Signal
E13	0.35 D-GN	5060	Low Speed GMLAN Serial Data

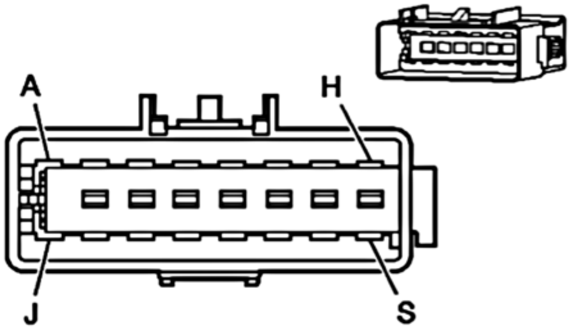
X205 Front Headliner Harness to Body Harness



Connector Part Information
Harness: Front Headliner
OEM: 15326952
Service: 15306426
Description: 16-Way F GT 280 Series (BK)

Terminal Part Information
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pins: B-C, G, S - 2/A
Core/Insulation Crimp: Pins: A, D-F, H-R - E/A
Release Tool/Test Probe: J-38125-553/J-35616-4A (PU)

Pin	Wire	Circuit	Function
A	0.35 BN	441	Ignition Voltage (U80)
B	0.8 D-GN	654	Low Reference (UE1)
C	0.8 GY	655	Celular Telephone Voice Signal (UE1)
D	0.35 GY	2599	Auxiliary Mode Door Control (C69)
E	0.5 WH	1924	Auxiliary Blower Motor High Control (C69)
F	0.35 BN	341	Ignition Voltage (C69)



Connector Part Information
Harness: Body
OEM: 13573920
Service: 15326956
Description: 16-Way M GT 280 Series (BK)

Terminal Part Information
Pins: B-C, G, S
Terminal/Tray: 15304724/8
Core/Insulation Crimp: 2/A
Release Tool/Test Probe: J-38125-553/J-35616-5 (PU)

Pins: A, D-F, H-R
Terminal/Tray: 15304722/8
Core/Insulation Crimp: E/C
Release Tool/Test Probe: J-38125-553/J-35616-5 (PU)

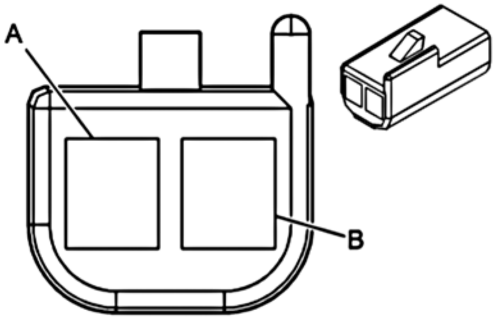
Pin	Wire	Circuit	Function
A	0.35 BN	441	Ignition Voltage (U80)
B	0.8 D-GN	654	Low Reference (UE1)
C	0.8 GY	655	Celular Telephone Voice Signal (UE1)
D	0.35 GY	2599	Auxiliary Mode Door Control (C69)
E	0.35 WH	1924	Auxiliary Blower Motor High Control (C69)
F	0.35 BN	341	Ignition Voltage (C69)

X205 Front Headliner Harness to Body Harness (cont d)

Pin	Wire	Circuit	Function
G	1 BK	1850	Ground (C69 or DH6)
	0.8 BK	1850	Ground (without C69, DH6 or YF1)
H	0.5 D-BU/WH	149	Courtesy Lamp Control
J	0.35 BK/WH	351	Ground (U80)
K	0.5 BN	5263	Rear Auxiliary Air Temperature Door Control (Passenger with C69)
L	0.35 D-GN	6134	Local Interconnect Network 3 (U80)
M	0.35 OG	2775	Auxiliary Air Temperature Door Control (C69)
N	0.5 OG	1925	Auxiliary Blower Motor Medium Control (C69)
P	0.5 D-BU	1926	Auxiliary Blower Motor Low Control (C69)
R	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (C69)
S	0.8 OG	1732	Courtesy Lamp Control (without YF7)
	0.5 OG	1732	Courtesy Lamp Control (YF7 or DH6)

Pin	Wire	Circuit	Function
G	1 BK	1850	Ground
H	0.5 D-BU/WH	149	Courtesy Lamp Control
J	0.35 BK/WH	351	Ground (U80)
K	0.5 BN	5263	Rear Auxiliary Air Temperature Door Control (Passenger with C69)
L	0.35 D-GN	6134	Local Interconnect Network 3 (U80)
M	0.35 OG	2775	Auxiliary Air Temperature Door Control (C69)
N	0.35 OG	1925	Auxiliary Blower Motor Medium Control (C69)
P	0.35 D-BU	1926	Auxiliary Blower Motor Low Control (C69)
R	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (C69)
S	0.8 OG	1732	Courtesy Lamp Control

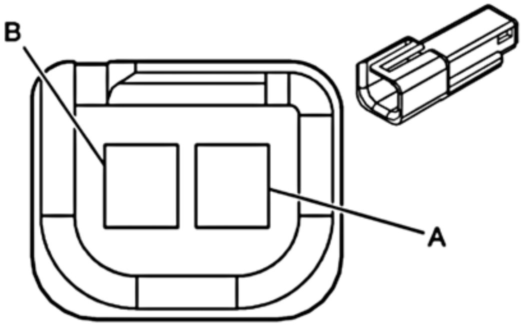
X206 Body Harness to Front Headliner Harness (Passenger with C69)



Connector Part Information
Harness: Body
OEM: 12047662
Service: 12085535
Description: 2-Way F Metri-Pack 150 Series (BK)

Terminal Part Information
Terminal/Tray: 15326030/5
Core/Insulation Crimp: E/C
Release Tool/Test Probe: J-38125-12A/J-35616-14 (GN)

Pin	Wire	Circuit	Function
A	0.5 PU/WH	5265	Rear Auxiliary Mode Door Control
B	0.5 PK/BK	5264	Rear Auxiliary Blower Motor Switch Control

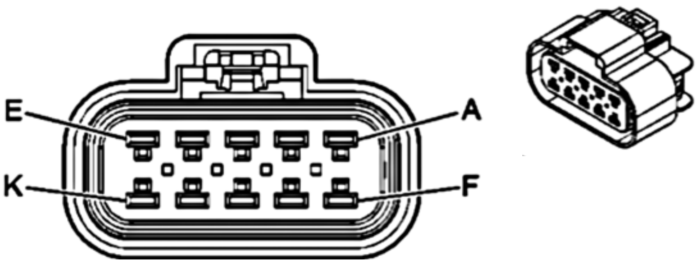


Connector Part Information
Harness: Front Headliner
OEM: 12047663
Service: 12085481
Description: 2-Way M Metri-Pack 150 Series (BK)

Terminal Part Information
Terminal/Tray: 12047581/2
Core/Insulation Crimp: E/C
Release Tool/Test Probe: J-38125-12A/J-35616-3 (GY)

Pin	Wire	Circuit	Function
A	0.5 PU/WH	5265	Rear Auxiliary Mode Door Control
B	0.5 PK/BK	5264	Rear Auxiliary Blower Motor Switch Control

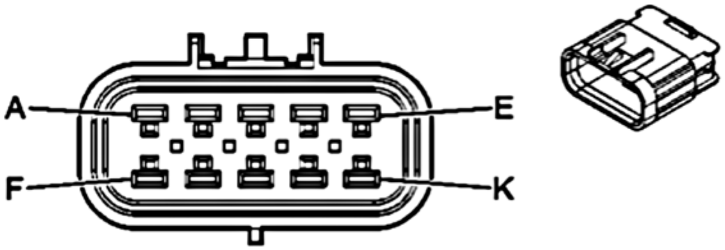
X405 Cutaway Rear Lighting Connector to Chassis Harness (Cutaway)



Connector Part Information
Harness Type: Cutaway Rear Lighting Connector
OEM Connector: 15326660
Service Connector: 88986262
Description: 10-Way F GT 280 5.8 Series, Sealed (BK)

Terminal Part Information
Terminated Lead: 13575405
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304719/19
Core/Insulation Crimp: 2/5

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 WH	17	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

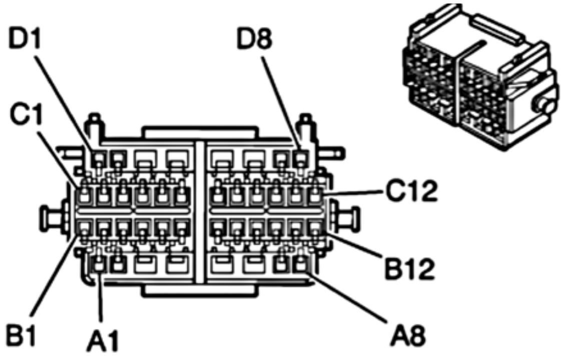


Connector Part Information
Harness Type: Chassis
OEM Connector: 15326661
Service Connector: 88986245
Description: 10-Way M GT 280 5.8 Series, Sealed (BK)

Terminal Part Information
Terminated Lead: 13327135
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: 15304731/19
Core/Insulation Crimp: Pins: C-H - 2/5
Core/Insulation Crimp: Pin K - C/5

Pin	Wire	Circuit	Function
A-B	--	--	Not Used
C	1 L-BU	1320	Center High Mounted Stop Lamp (CHMSL) Control
D	1 YE	618	Left Rear Turn Signal Lamp Control
E	1 D-GN	619	Right Rear Turn Signal Lamp Control
F	1 BN	2109	Trailer Park Lamps Control
G	1 BK	150	Ground
H	1 L-GN	1624	Trailer Backup Lamps Control
J	--	--	Not Used
K	0.8 D-BU/WH	149	Courtesy Lamp Control

X500 Driver Door Harness to Body Harness

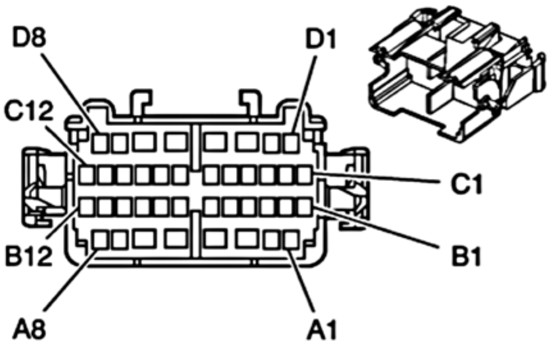


Connector Part Information
Harness Type: Driver Door
OEM Connector: 15448129
Service Connector: 89046969
Description: 40-Way F GT 150 280 Series (BK)

Terminal Part Information
Pins: A1, A7-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8
Terminated Lead: 13575735
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 12191812/19
Core/Insulation Crimp:Pins: A1, A8, B1-B4, D7-D8 - E/C
Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - C/A

Pins: A5-A6, D4-D6
Terminated Lead: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 13575753
Terminated Lead: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 13575756
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - 15304711/8
Terminal/Tray: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - 15304713/19
Core/Insulation Crimp: Pins: A5 (AU3 without DE5, DE7 or A31), A6 - E/A
Core/Insulation Crimp: Pins: A5 (AU3 with DE5, DE7 or A31), D4-D6 - F/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal



Connector Part Information
Harness Type: Body
OEM Connector: 15416976
Service Connector: 89047197
Description: 40-Way M GT 150 280 Series (BK)

Terminal Part Information
Pins: A1, A6-A8, B1-B4, B7-B8, B12, C1-C2, C7-C8, C12, D7-D8
Terminated Lead: 13575502
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 15304702/19
Core/Insulation Crimp: Pins: A1, A6, B1-B4 - E/C
Core/Insulation Crimp: Pins: A8, C1-C2, C7-C8, D7-D8 - E/4
Core/Insulation Crimp: Pins: A7, B7-B8, B12, C12 - 2/4

Pins: A5, D4-D6
Terminated Lead: 13575510
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: 15304724/8
Core/Insulation Crimp: A/D

Pin	Wire	Circuit	Function
A1	0.35 TN	126	Left Front Door Open Switch Signal

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X500 Driver Door Harness to Body Harness (cont d)

Pin	Wire	Circuit	Function
A2-A4	--	--	Not Used
A5	0.35 BK	450	Ground (AU3 without DE5, DE7 or A31)
	3 BK	450	Ground (AU3 with DE5, DE7 or A31)
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3)
	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.35 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)

A2-A4	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
A5	3 BK	450	Ground
A6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3 or A31)
A7	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A8	0.5 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B1	0.35 OG/BK	781	Driver Door Lock Switch Unlock Signal (AU3)
B2	0.35 PK/BK	780	Driver Door Lock Switch Lock Signal (AU3)
B3	0.35 GY/BK	745	Left Front Door Ajar Switch Signal
B4	0.35 BK	450	Ground
B5-B6	--	--	Not Used
B7	0.8 TN	694	Driver Door Lock Actuator Unlock Control (AU3)
B8	1 GY	295	Door Lock Actuator Lock Control (AU3)
B9-B11	--	--	Not Used
B12	0.8 D-BU	1857	Left Front Midrange Speaker Output (+)
C1	0.5 PU/WH	6628	Low Reference (ASF)
C2	0.5 WH	2132	Side Impact Sensing Module - Left - Signal (ASF)
C3-C6	--	--	Not Used
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)

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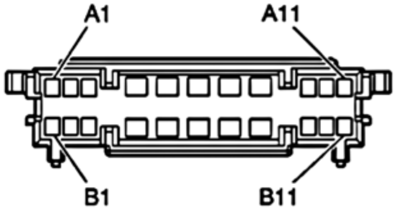
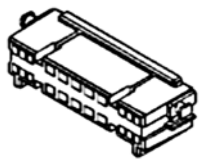
X500 Driver Door Harness to Body Harness (cont d)

C3-C6	--	--	Not Used
Pin	**Wire**	**Circuit**	**Function**
C7	0.5 L-BU/WH	1314	Left Front Turn Signal Lamp Control (DE5 or DE7)
C8	0.5 RD/WH	4340	Battery Positive Voltage (DE5 or DE7)
C9-C11	--	--	Not Used
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)
D7	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
D8	0.35 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

C9-C11	--	--	Not Used
C12	0.8 L-BU	1957	Left Front Midrange Speaker Output (-)
Pin	**Wire**	**Circuit**	**Function**
D1-D3	--	--	Not Used
D4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
D5	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
D6	3 D-GN	1001	RAP Control (A31)
D7	0.5 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
D8	0.5 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)

X600 Passenger Door Harness to Body Harness





Connector Part Information

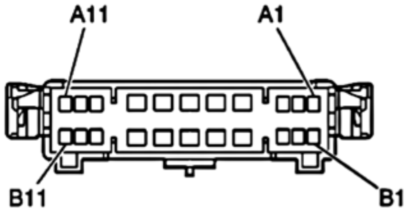
Harness Type: Passenger Door
OEM Connector: 15326063
Service Connector: 15326063
Description: 22-Way F GT 150, 280 (GY)

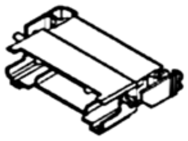
Terminal Part Information

Pins: A1-A3, A9-A11, B1-B3, B10-B11
Terminated Lead: 13575735
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-2A (GY)
Terminal/Tray: 12191812/19
Core/Insulation Crimp: Pins: A1-A3, B1-B2 - C/A
Core/Insulation Crimp: Pins: A9-A11, B3, B10-B11 - E/C

Pins: A4, B4-B5
Terminated Lead: 13575756
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304713/19
Core/Insulation Crimp: F/D

Pins: A5-A8, B6-B8
Terminated Lead: 13575753
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-4A (PU)
Terminal/Tray: 15304711/8
Core/Insulation Crimp: Pin A5 - 2/A
Core/Insulation Crimp: Pins: A6-A8, B6-B8 - E/A





Connector Part Information

Harness Type: Body
OEM Connector: 15326064
Service Connector: 15326064
Description: 22-Way M GT 150, 280 (GY)

Terminal Part Information

Pins: A1-A3, A9-A11, B1-B3, B10-B11
Terminated Lead: 13575502
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-3 (GY)
Terminal/Tray: 15304702/19
Core/Insulation Crimp: Pins: A1-A3, B1-B2 - 2/4
Core/Insulation Crimp: Pins: A9, A11, B11 - E/C
Core/Insulation Crimp: Pins: A10, B3, B10 - E/4

Pins: A4, B4-B5
Terminated Lead: 13575510
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: 15304724/8
Core/Insulation Crimp: A/D

Pins: A5-A8, B6-B8
Terminated Lead: 13575507
Release Tool: J-38125-553
Diagnostic Test Probe: J-35616-5 (PU)
Terminal/Tray: Pin A5 - 15304724/8
Terminal/Tray: Pins: A6-A8, B6-B8 - 15304722/8
Core/Insulation Crimp: Pin A5 - 2/A
Core/Insulation Crimp: Pins: A6-A8, B6-B8 - E/C

(continued on next page)

Pin	Wire	Circuit	Function
A1	0.8 OG	1853	Right Front Midrange Speaker Output (+)
A2	0.8 TN	294	Door Lock Actuator Unlock Control (AU3)
A3	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A4	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
A5	0.8 BK	1850	Ground
A6	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
	0.35 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
A7	0.35 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)
A8	0.35 TN/WH	746	Right Front Door Ajar Switch Signal
A9	0.35 BK	1850	Ground
A10	0.5 D-GN	2134	Side Impact Sensing Module - Right - Signal
A11	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
B1	0.8 D-GN	1953	Right Front Midrange Speaker Output (-)
B2	0.8 GY	295	Door Lock Actuator Lock Control (AU3)
B3	0.5 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
B4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)

Pin	Wire	Circuit	Function
A1	0.8 OG	1853	Right Front Midrange Speaker Output (+)
A2	0.8 TN	294	Door Lock Actuator Unlock Control (AU3)
A3	0.8 OG	2267	Mirror Heating Element Control (DE5 or DE7)
A4	3 L-BU	166	Power Window Master Switch Right Front Up Signal (A31)
A5	0.8 BK	1850	Ground
A6	0.5 BN/WH	1498	Passenger Mirror Motor Left/ Down Control (DE5 or DE7)
A7	0.5 OG/WH	881	Passenger Mirror Motor Right Control (DE5 or DE7)
A8	0.35 TN/WH	746	Right Front Door Ajar Switch Signal
A9	0.35 BK	1850	Ground
A10	0.5 D-GN	2134	Side Impact Sensing Module - Right -- Signal
A11	0.35 L-BU	244	Passenger Door Lock Switch Lock Control (AU3)
B1	0.8 D-GN	1953	Right Front Midrange Speaker Output (-)
B2	1 GY	295	Door Lock Actuator Lock Control (AU3)
B3	0.5 D-BU/WH	1315	Right Front Turn Signal Lamp Control (DE5 or DE7)
B4	3 TN	167	Power Window Master Switch Right Front Down Signal (A31)
B5	3 D-GN	1001	RAP Control (A31)

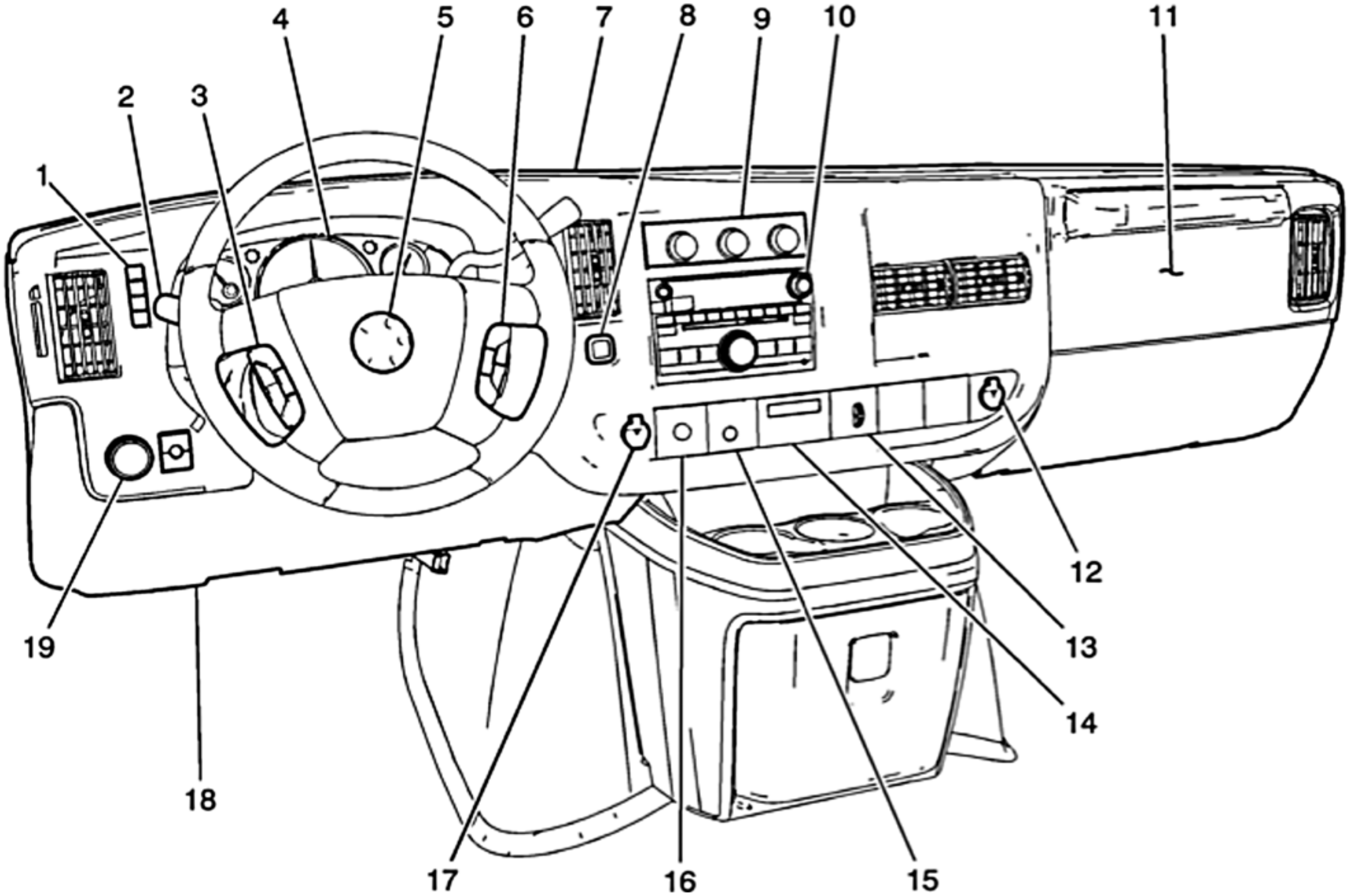
(continued on next page)

X600 Passenger Door Harness to Body Harness (cont d)

B5	3 D-GN	1001	RAP Control (A31)
Pin	**Wire**	**Circuit**	**Function**
B6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3)
	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (A31)
B7	0.35 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B8	0.35 L-GN	1177	Right Front Door Open Switch Signal
B9	--	--	Not Used
B10	0.5 WH/BK	6629	Low Reference (ASF)
B11	0.35 D-BU	245	Passenger Door Lock Switch Unlock Control (AU3)

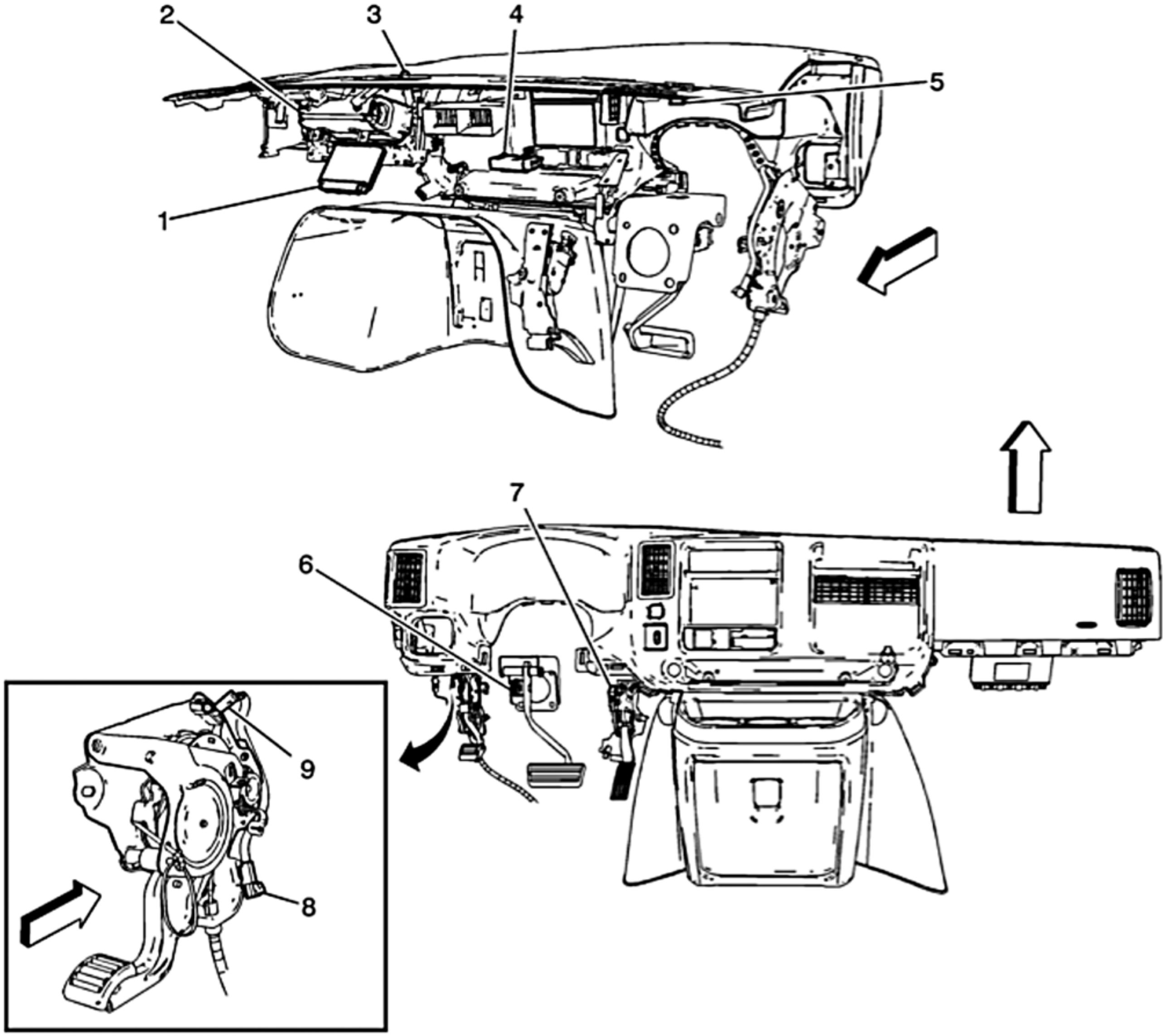
B6	0.35 BN/WH	230	Instrument Panel Lamps Dimming Control (AU3 or A31)
Pin	**Wire**	**Circuit**	**Function**
B7	0.5 PU/WH	889	Passenger Mirror Motor Down Control (DE5 or DE7)
B8	0.35 L-GN	1177	Right Front Door Open Switch Signal
B9	--	--	Not Used
B10	0.5 WH/BK	6629	Low Reference (ASF)
B11	0.35 D-BU	245	Passenger Door Lock Switch Unlock Control (AU3)

Instrument Panel Components



(1) Driver Information Center (DIC) Switch
(2) Turn Signal/Multifunction Switch
(3) Steering Wheel Control Switch - Left (K34)
(4) Instrument Panel Cluster (IPC)
(5) Inflatable Restraint Steering Wheel Module
(6) Steering Wheel Control Switch - Right (W1Y)
(7) Instrument Panel
(8) Tow/Haul Switch
(9) HVAC Control Assembly
(10) Radio
(11) Inflatable Restraint I/P Module
(12) Accessory Power Outlet - Center Console 2
(13) Blower Motor Switch - Auxiliary (C36 without C69)
(14) Inflatable Restraint I/P Module Indicator (Light Duty without YF7)
(15) Inflatable Restraint I/P Module Disable Switch (C99)
(16) Traction Control Switch (TCS) (JL4)
(17) Cigar Lighter (DT4)/Accessory Power Outlet - Center Console 1 (without DT4)
(18) Data Link Connector (DLC)
(19) Headlamp and Panel Dimmer Switch

Instrument Panel Harness Components



(1) Body Control Module (BCM)

(2) Inflatable Restraint I/P Module

(3) Ambient Light Sensor

(4) Chime Module (UL5)

(5) Remote Control Door Lock Receiver (RCDLR) (AU0)

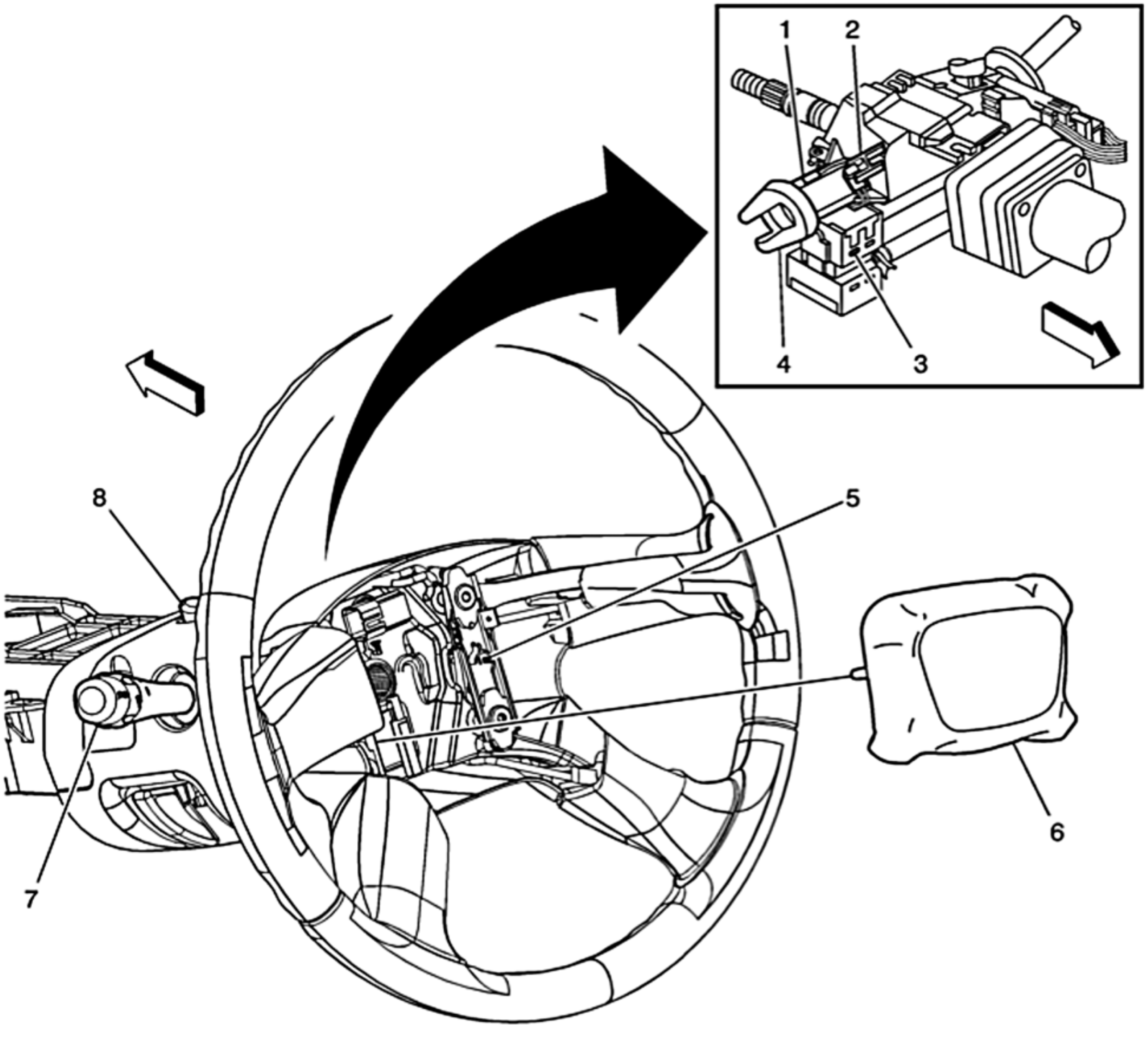
(6) Stop Lamp Switch

(7) Accelerator Pedal Position (APP) Sensor

(8) Park Brake Switch Pigtail Connector

(9) Park Brake Switch

Upper Steering Column



(1) Theft Deterrent Module (TDM)

(2) Ignition Key Alarm Switch

(3) Ignition Switch

(4) Ignition Key Cylinder

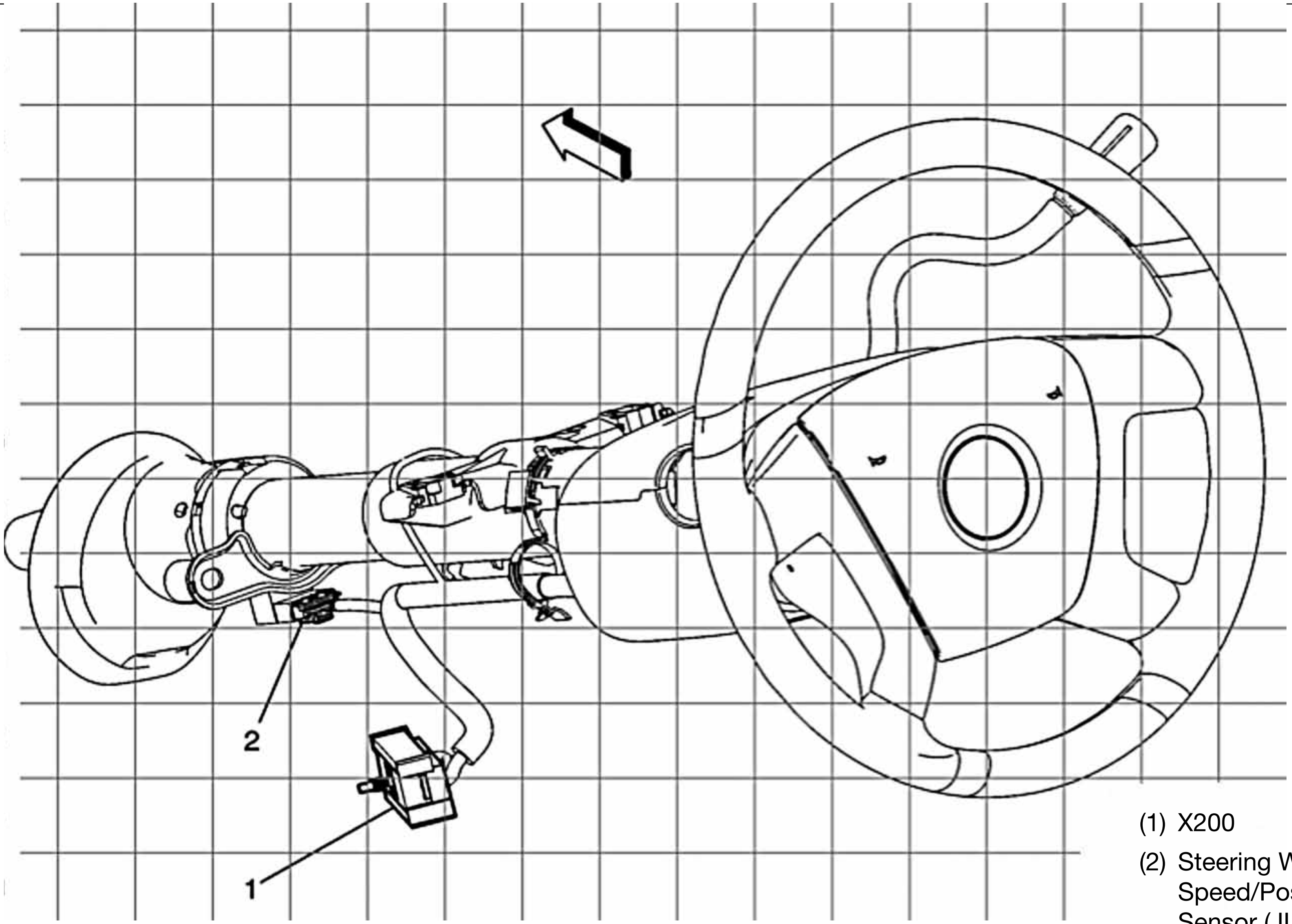
(5) Horn Switch

(6) Inflatable Restraint Steering Wheel Module

(7) Turn Signal/Multifunction Switch

(8) Hazard Warning Switch

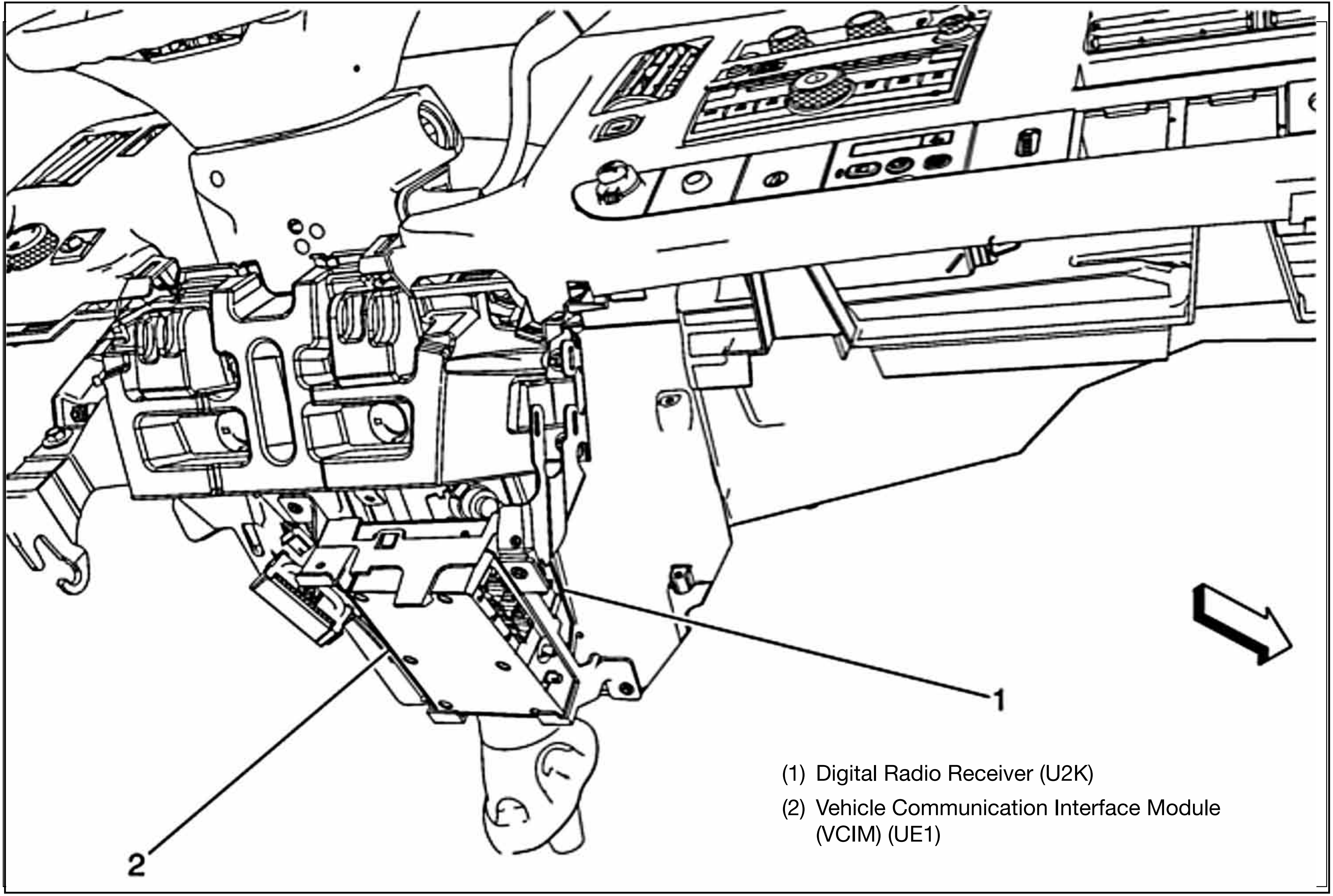
Steering Column



(1) X200

(2) Steering Wheel Speed/Position Sensor (JL4)

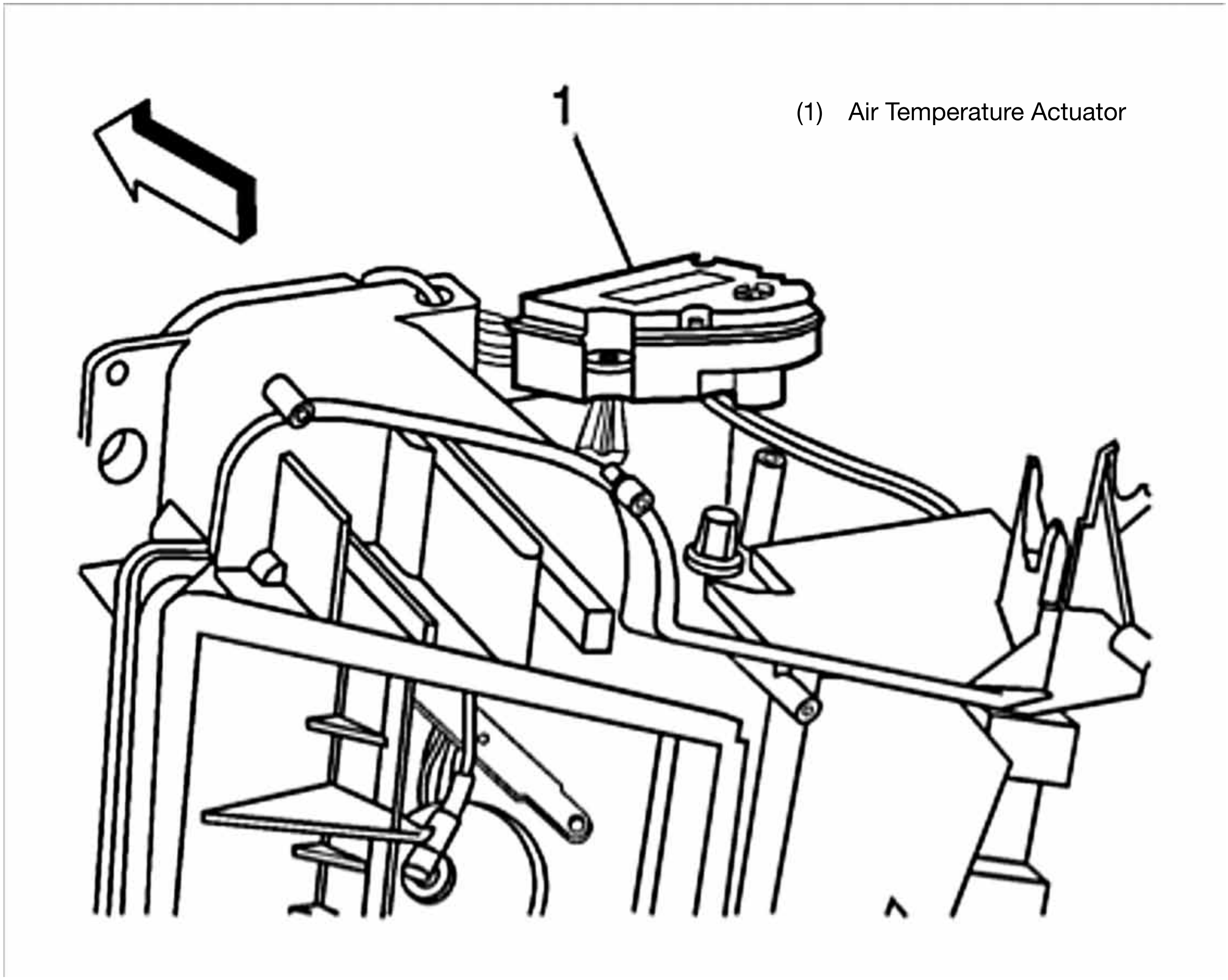
Under Steering Column Components



(1) Digital Radio Receiver (U2K)

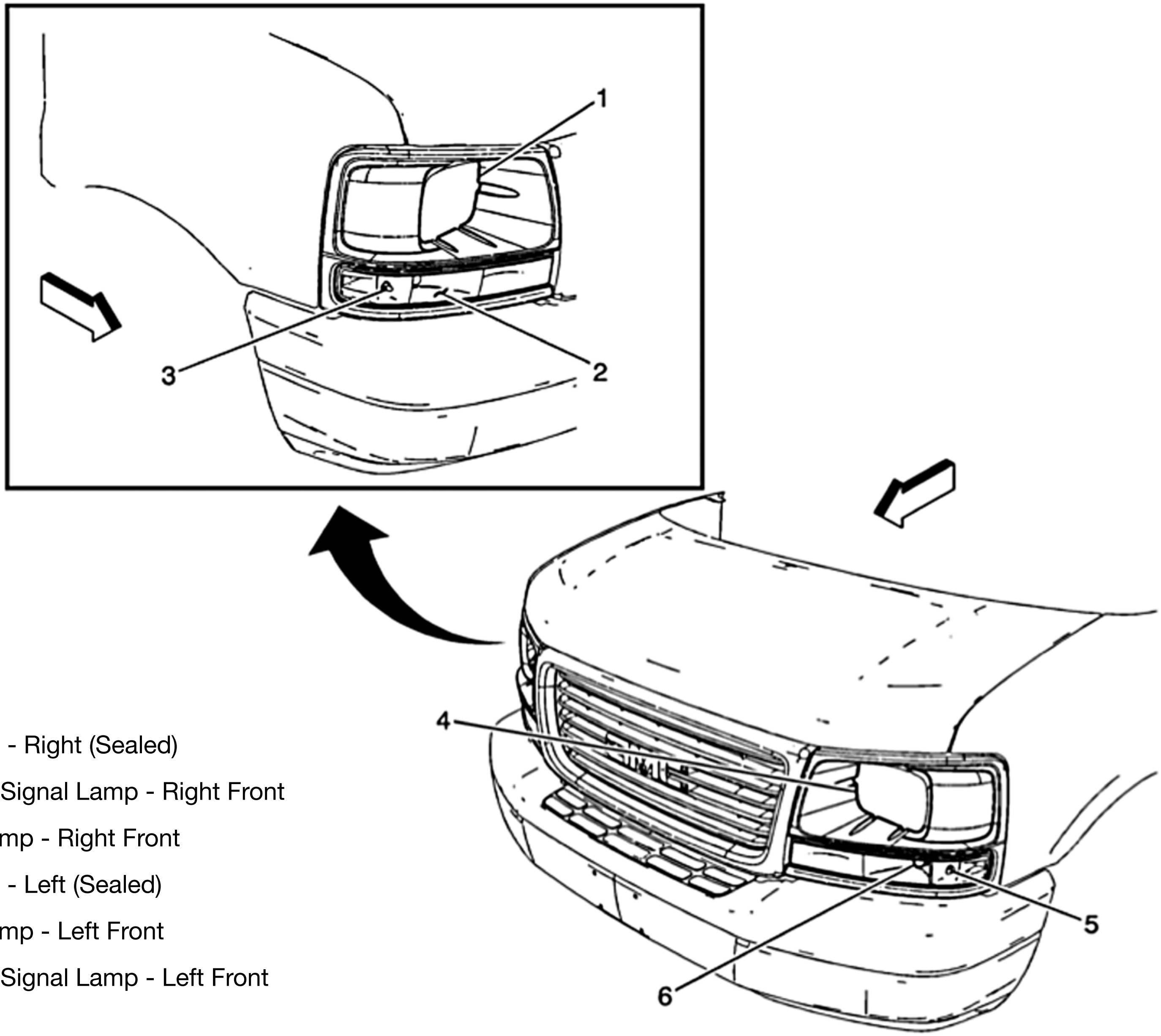
(2) Vehicle Communication Interface Module (VCIM) (UE1)

Air Temperature Actuator



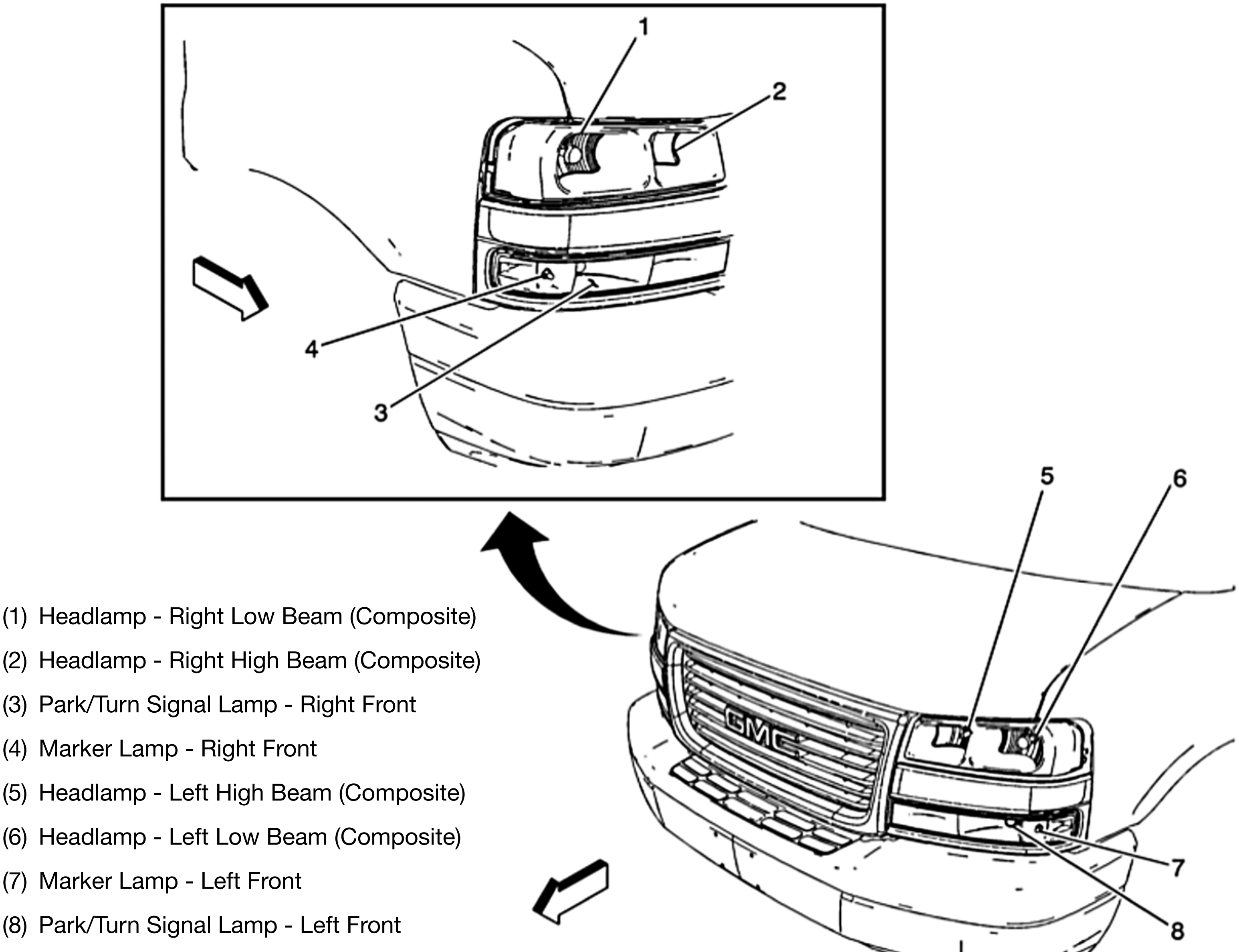
(1) Air Temperature Actuator

Front Exterior Lighting (Base)



(1) Headlamp - Right (Sealed)
(2) Park/Turn Signal Lamp - Right Front
(3) Marker Lamp - Right Front
(4) Headlamp - Left (Sealed)
(5) Marker Lamp - Left Front
(6) Park/Turn Signal Lamp - Left Front

Front Exterior Lighting (Uplevel)



(1) Headlamp - Right Low Beam (Composite)

(2) Headlamp - Right High Beam (Composite)

(3) Park/Turn Signal Lamp - Right Front

(4) Marker Lamp - Right Front

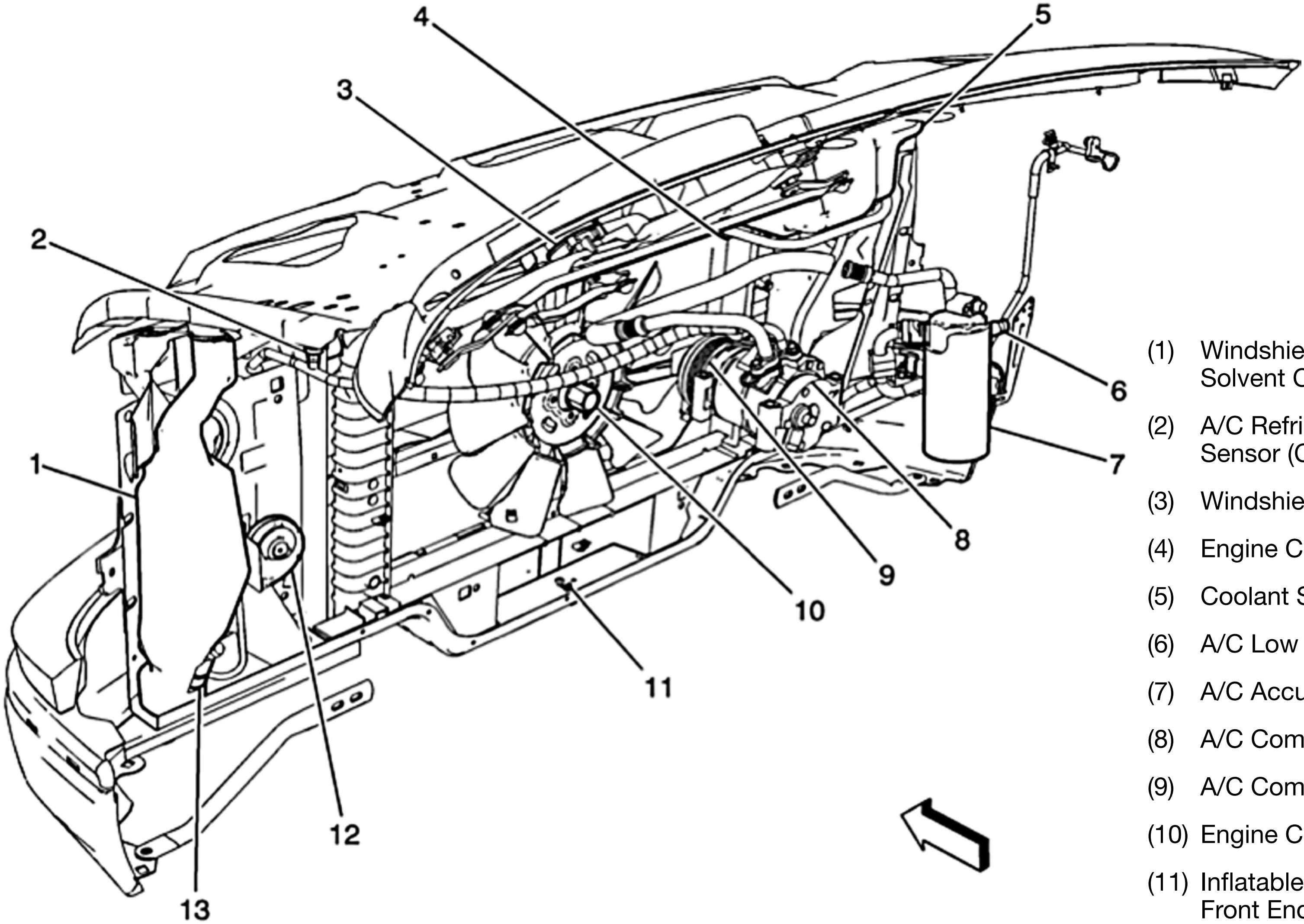
(5) Headlamp - Left High Beam (Composite)

(6) Headlamp - Left Low Beam (Composite)

(7) Marker Lamp - Left Front

(8) Park/Turn Signal Lamp - Left Front

Front of Engine Compartment



(1) Windshield Washer Solvent Container

(2) A/C Refrigerent Pressure Sensor (C60)

(3) Windshield Wiper Motor

(4) Engine Coolant Level Switch (LMM)

(5) Coolant Surge Tank

(6) A/C Low Pressure Switch (C60)

(7) A/C Accumulator (C60)

(8) A/C Compressor (C60)

(9) A/C Compressor Clutch (C60)

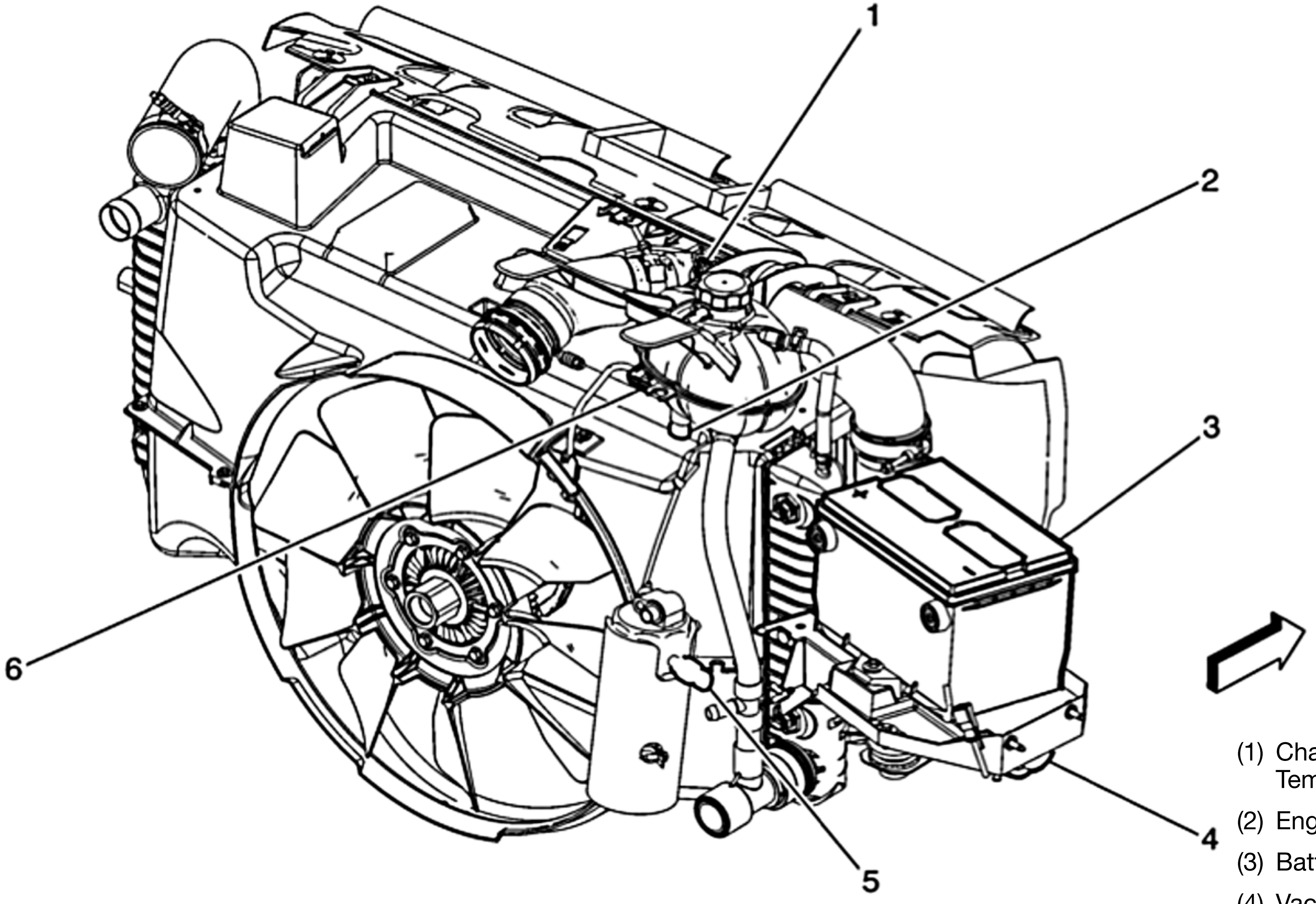
(10) Engine Cooling Fan Clutch

(11) Inflatable Restraint Front End Sensor

(12) Horn Assembly

(13) Windshield Washer Fluid Pump

Front of Engine Compartment Components (LGH)



(1) Charge Air Cooler Outlet Temperature Sensor

(2) Engine Coolant Level Switch

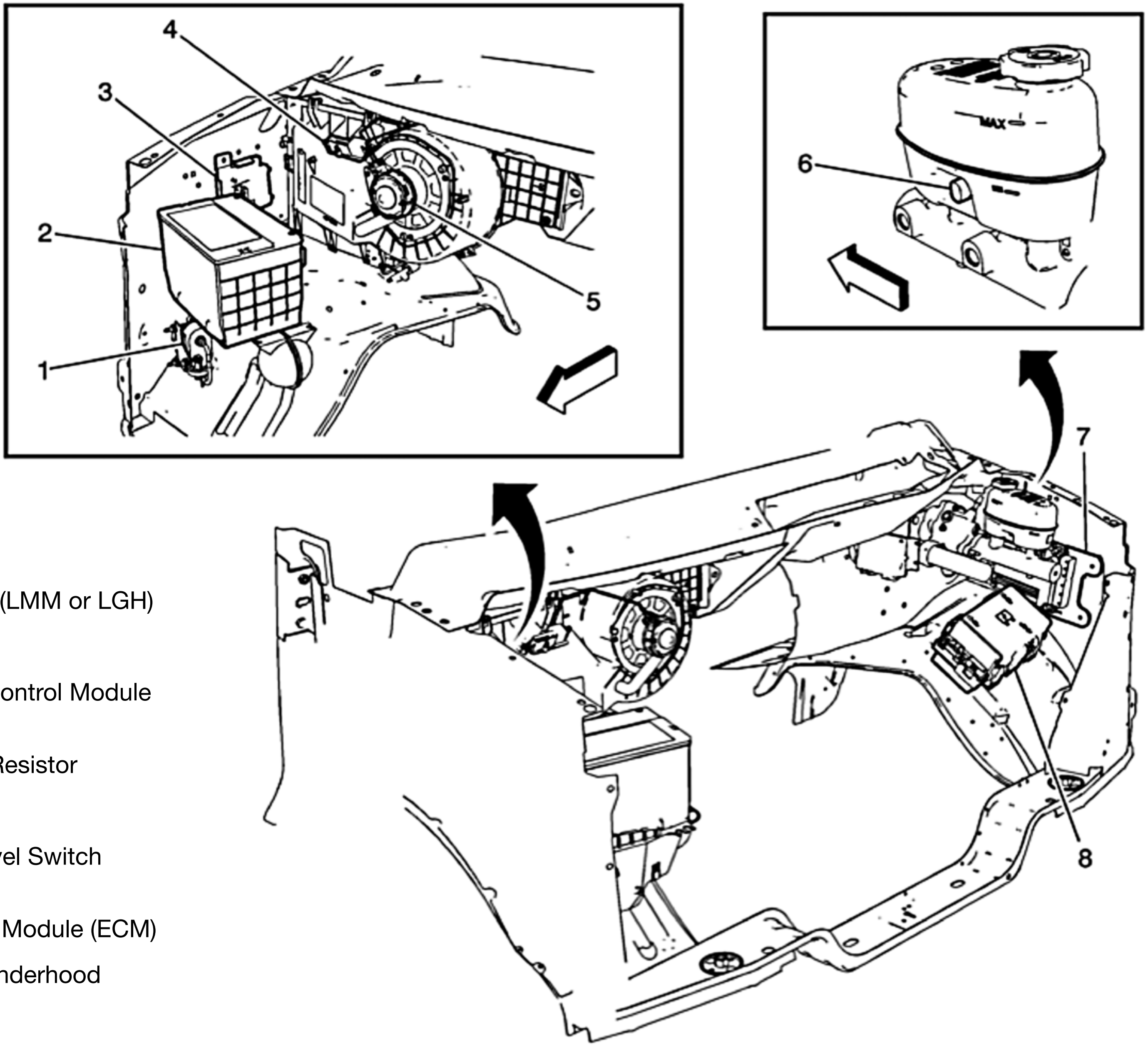
(3) Battery

(4) Vacuum Pump

(5) A/C Low Pressure Switch (C60)

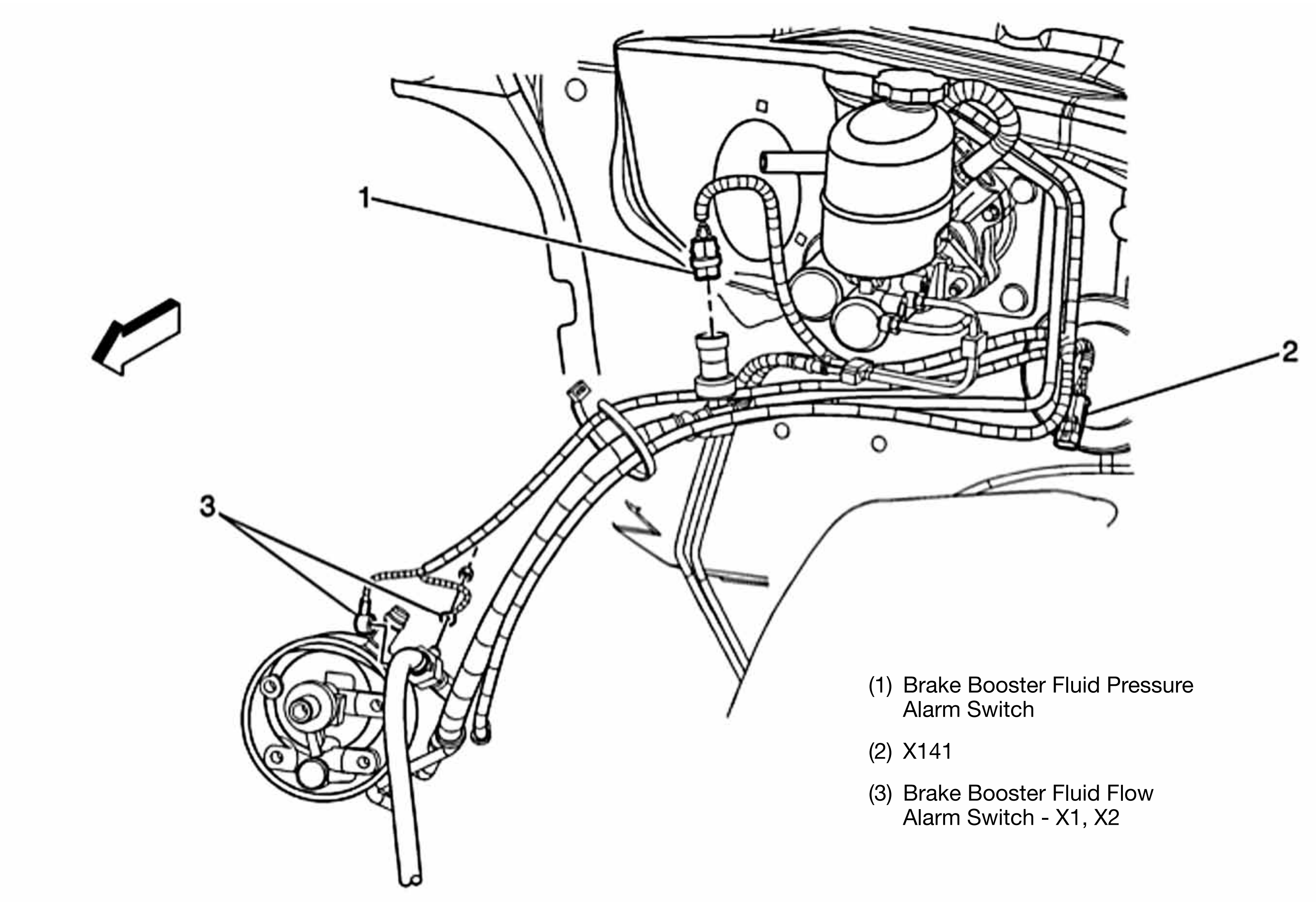
(6) X142

Engine Compartment



(1)	Vacuum Pump (LMM or LGH)
(2)	Battery
(3)	Transmission Control Module (TCM)
(4)	Blower Motor Resistor
(5)	Blower Motor
(6)	Brake Fluid Level Switch (Heavy Duty)
(7)	Engine Control Module (ECM)
(8)	Fuse Block - Underhood

Brake Booster Fluid Alarm Switches (UJ1)

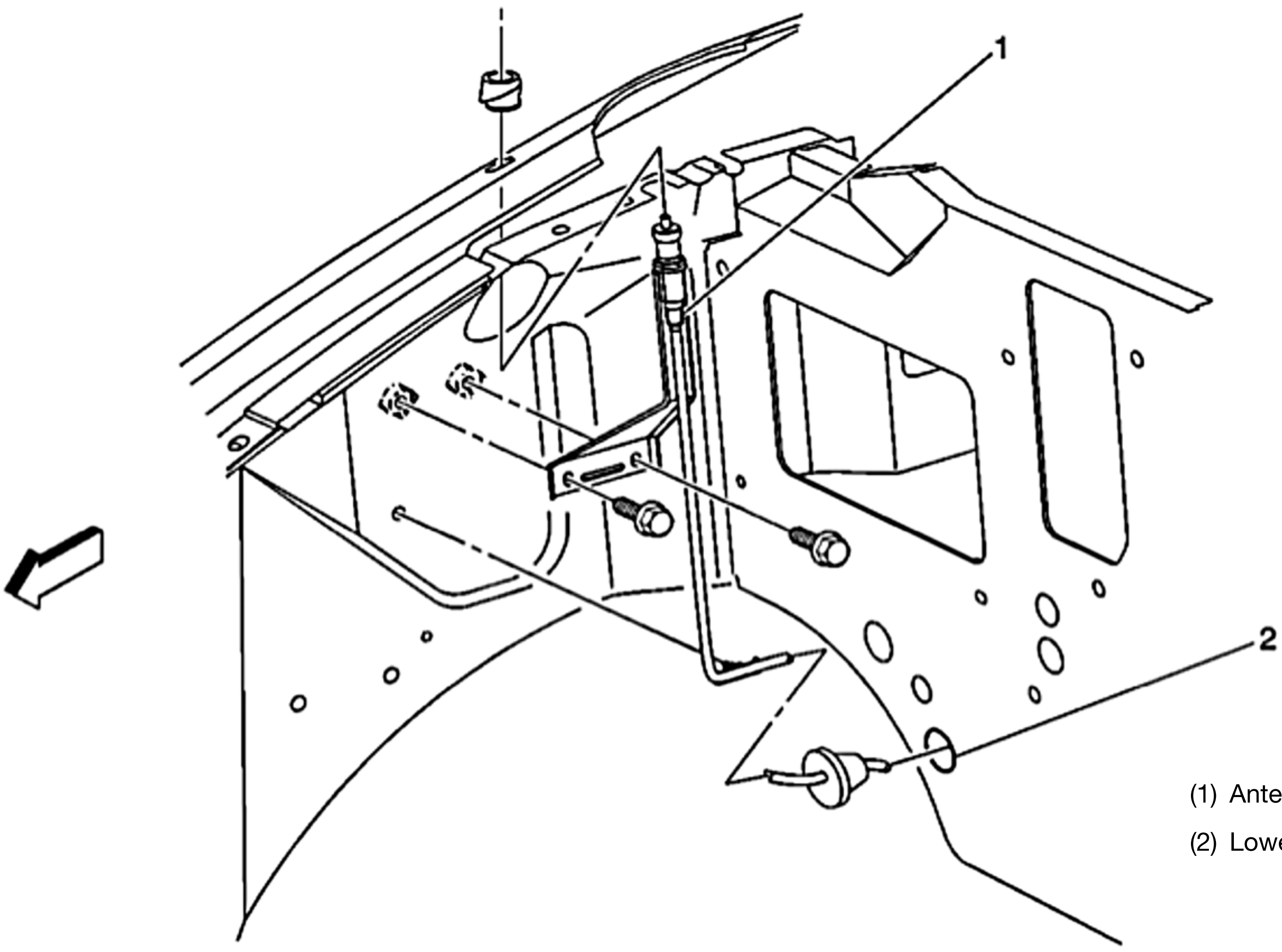


(1) Brake Booster Fluid Pressure Alarm Switch

(2) X141

(3) Brake Booster Fluid Flow Alarm Switch - X1, X2

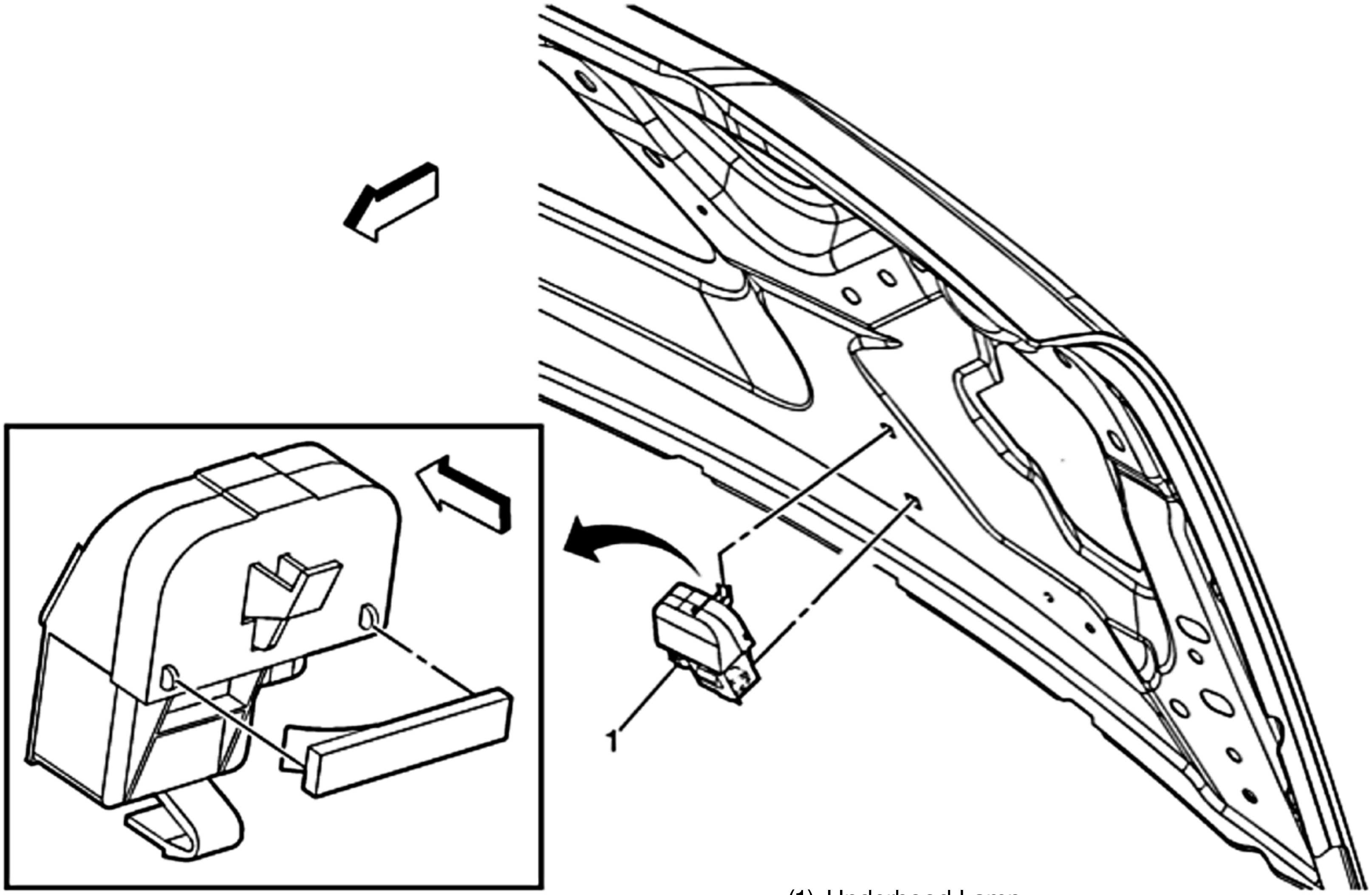
Right Rear of the Engine Compartment



(1) Antenna

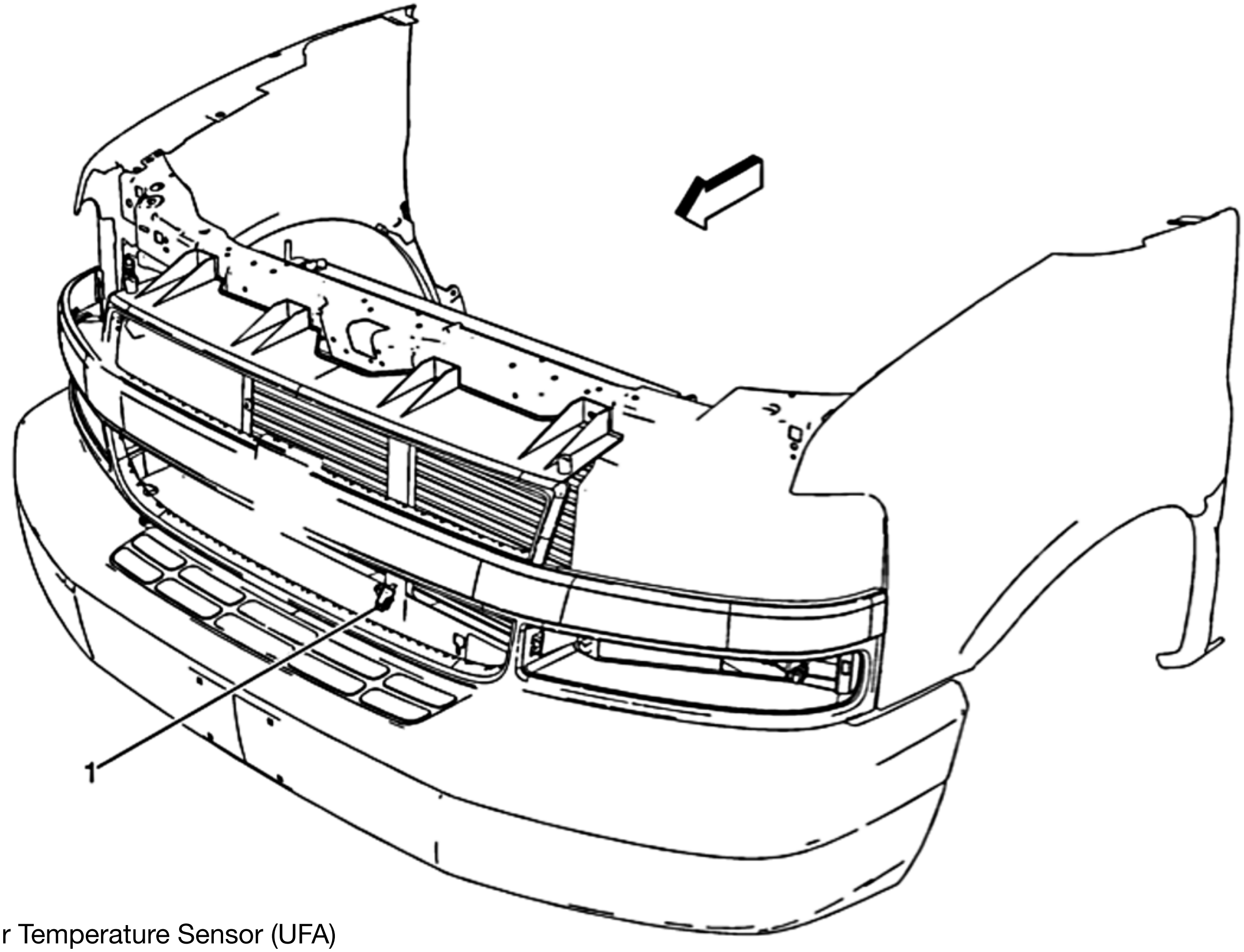
(2) Lower Cowl

Underhood Lamp



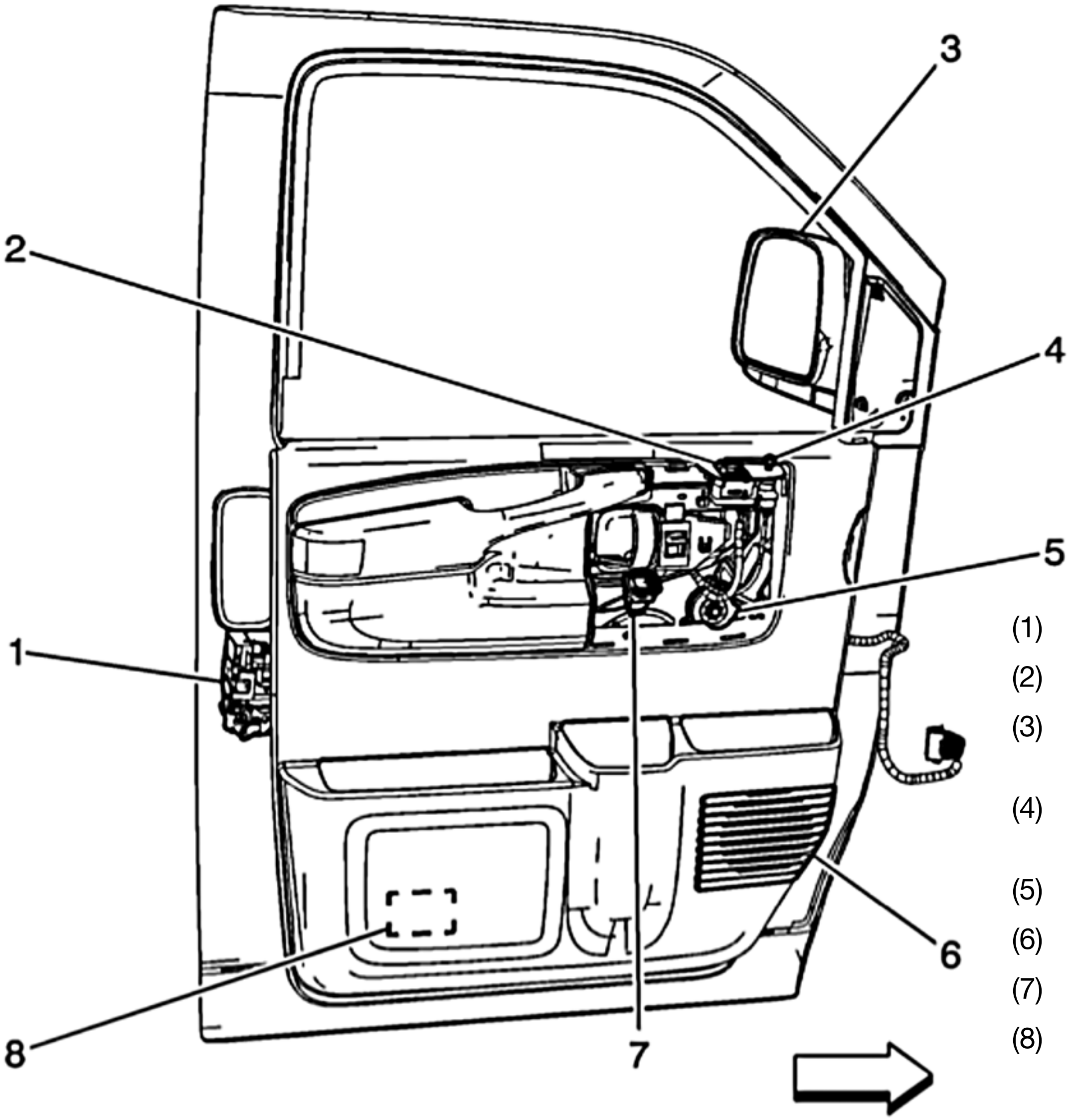
(1) Underhood Lamp

Ambient Air Temperature Sensor (UFA)



(1) Ambient Air Temperature Sensor (UFA)

Driver Door



(1) Door Latch - Driver

(2) Window Switch - Driver (A31)

(3) Outside Rearview Mirror - Driver (DE5 or DE7)

(4) Outside Rearview Mirror Switch (DE5 or DE7)

(5) Window Motor - Driver (A31)

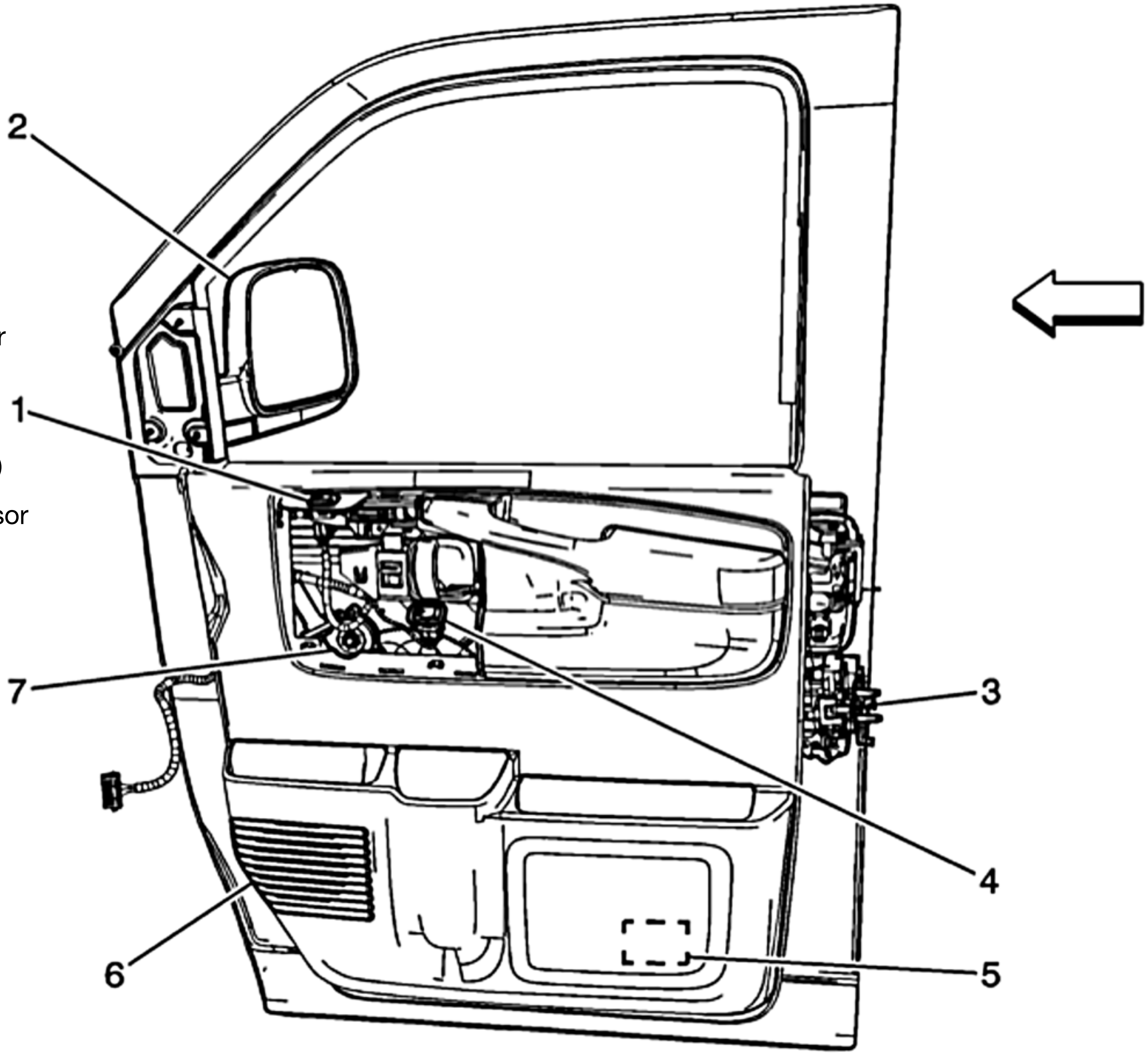
(6) Speaker - Left Front

(7) Door Lock Switch - Driver (AU3)

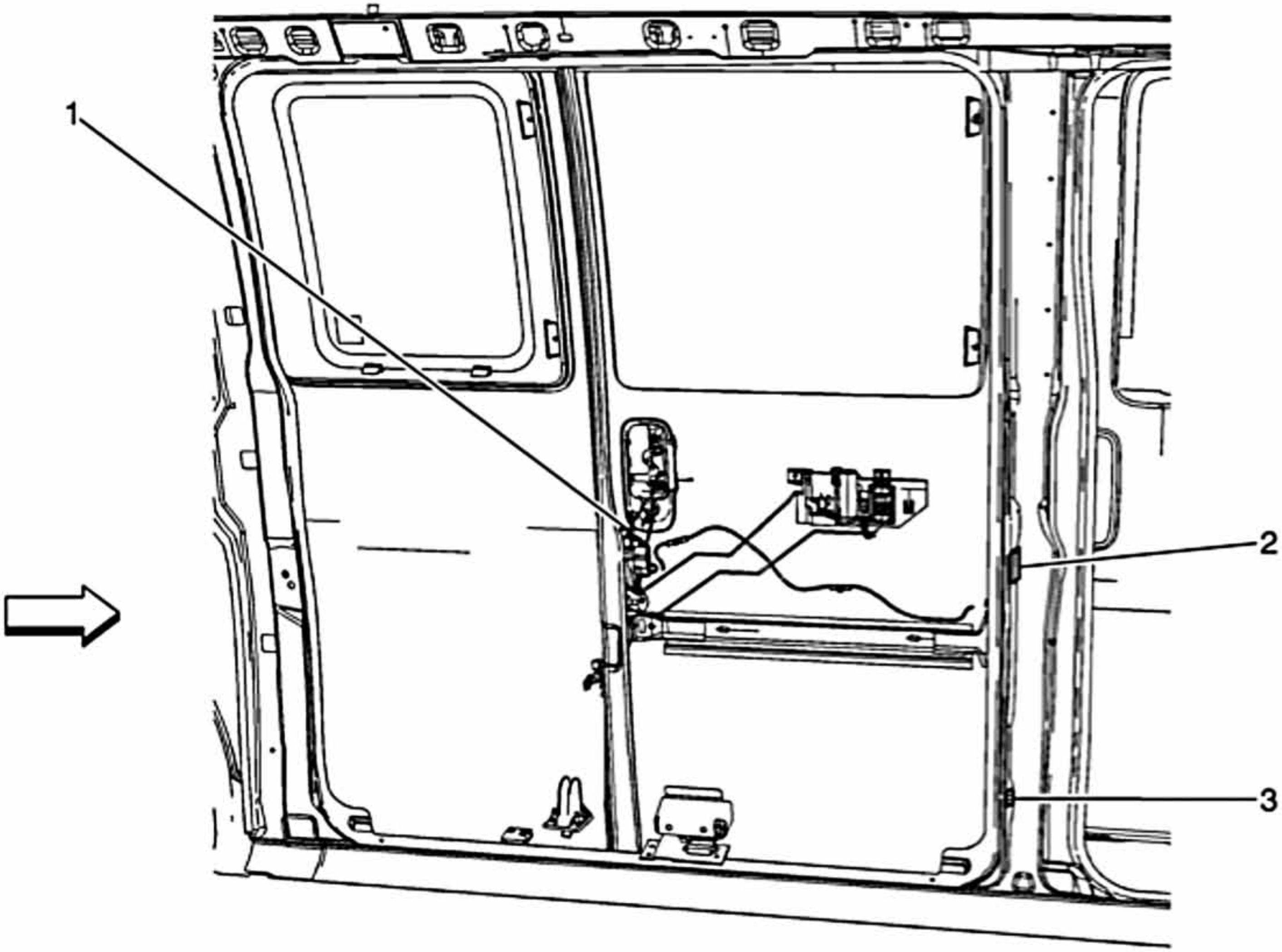
(8) Inflatable Restraint Side Impact Sensor (SIS) - Left Front (ASF)

Front Passenger Door

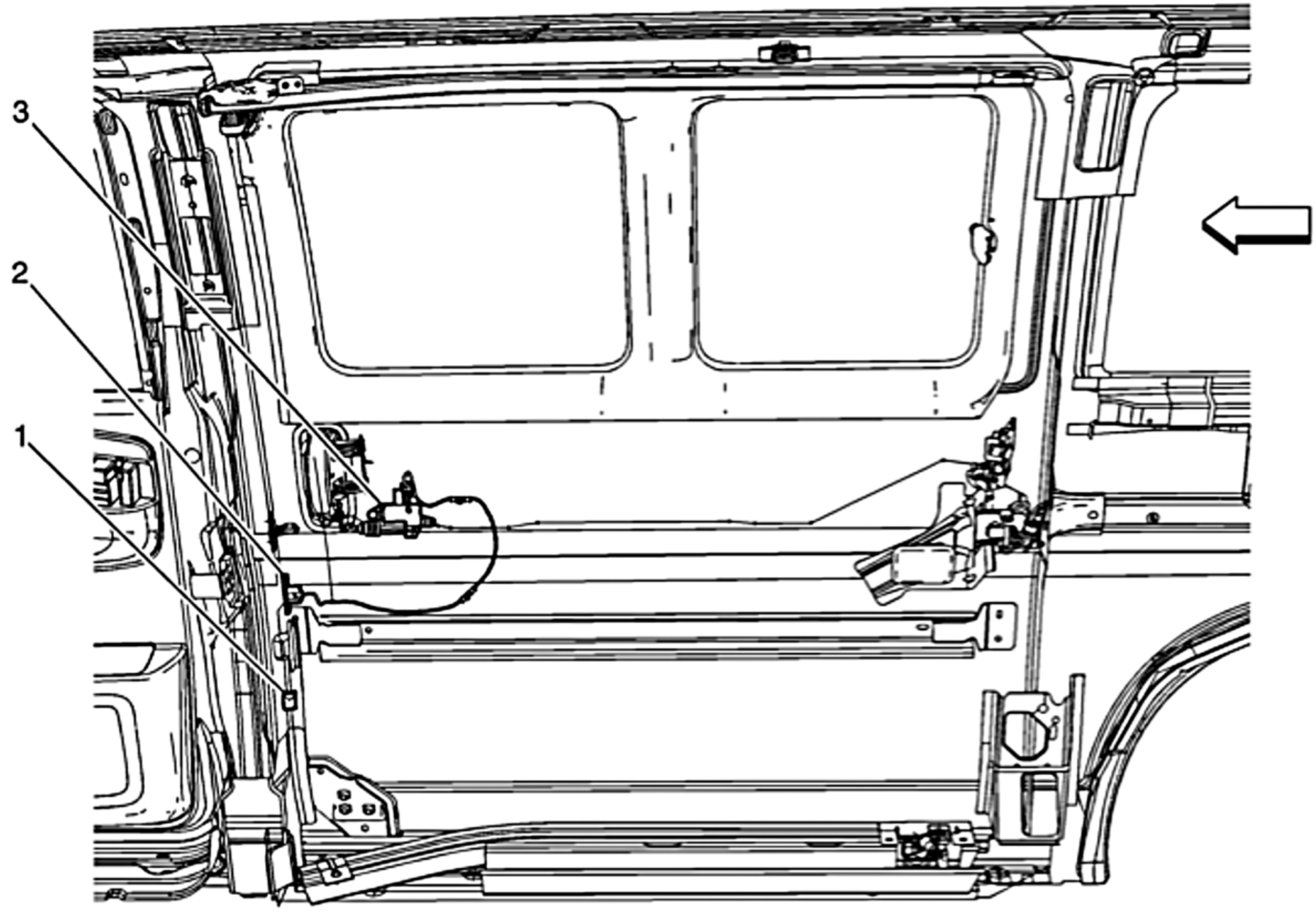
(1) Window Switch - Passenger (A31)
(2) Outside Rearview Mirror - Passenger (DE5 or DE7)
(3) Door Latch - Passenger
(4) Door Lock Switch - Passenger (AU3)
(5) Inflatable Restraint Side Impact Sensor (SIS) - Right Front (ASF)
(6) Speaker - Right Front
(7) Window Motor - Passenger (A31)



Left Side Door (E26)



Right Sliding Door (YA2)

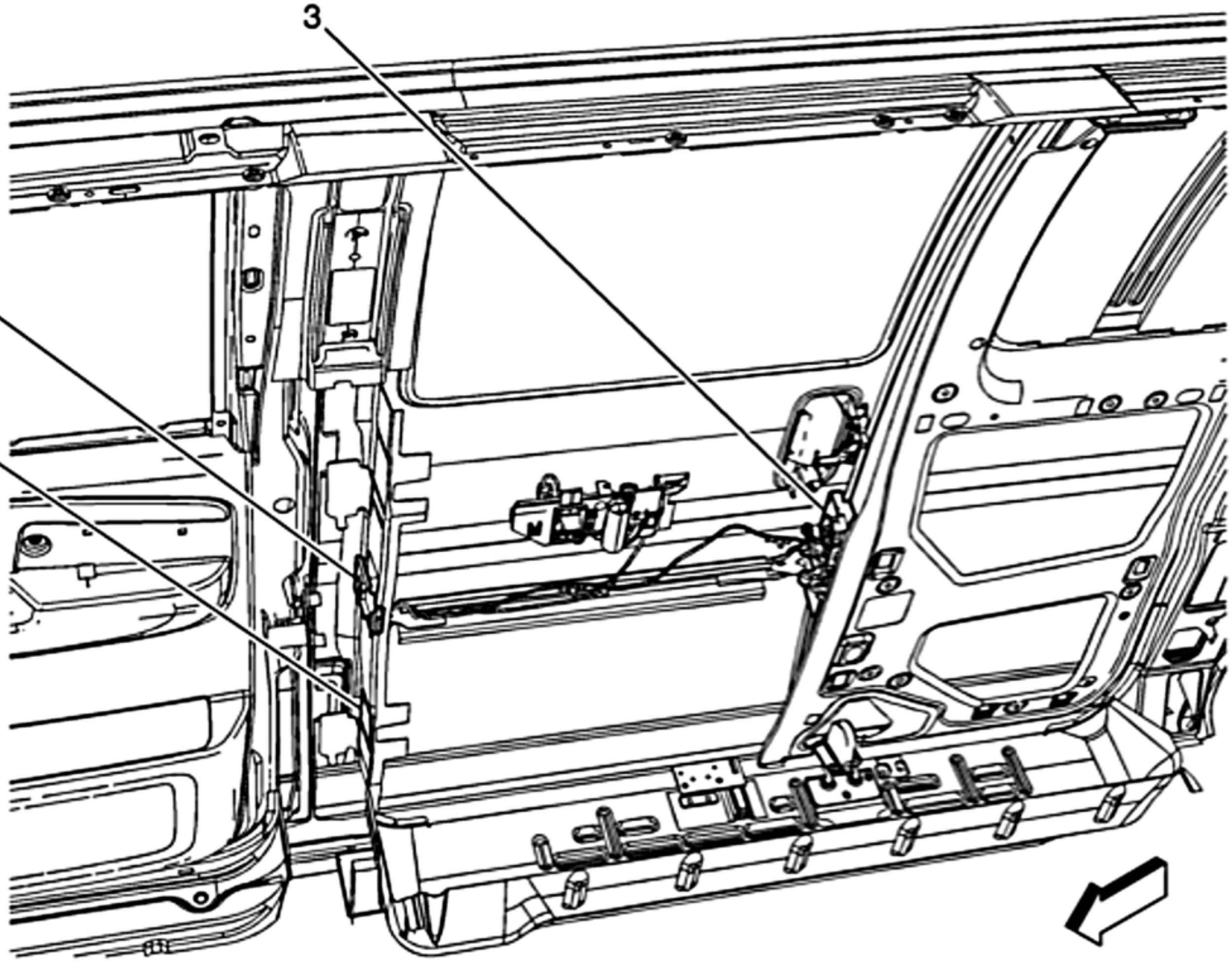


(1) Door Jamb Switch - Right Rear

(2) Door Contact Plate - Right (AU3)

(3) Door Lock Actuator - Right Rear (AU3)

Right Side Door (E24)

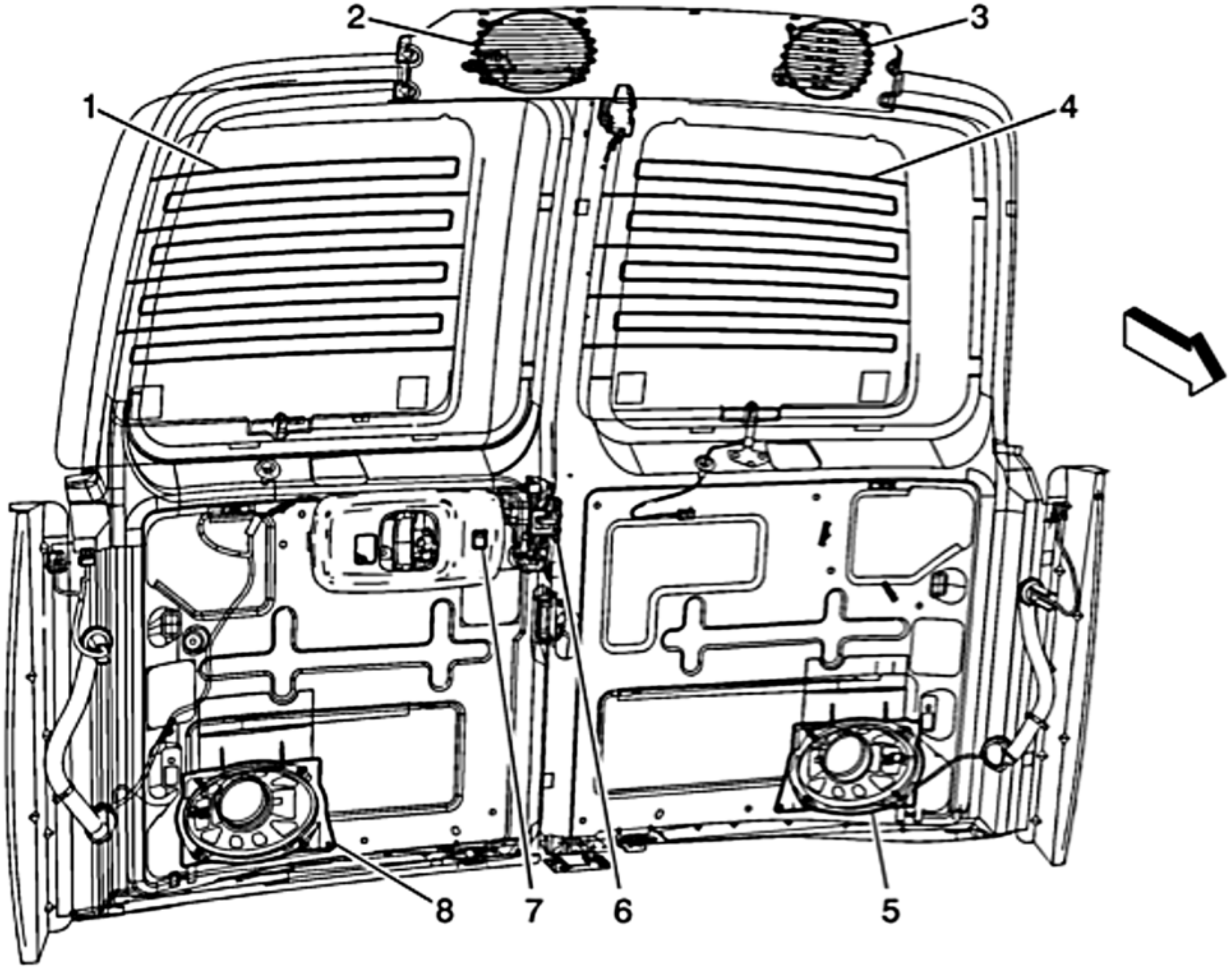


(1) Door Jamb Switch - Right Rear

(2) Door Contact Plate - Right (AU3)

(3) Door Lock Actuator - Right Rear (AU3)

Rear Doors (Passenger or Cargo)



(1) Rear Window Defogger Grid - Right (C49)

(2) Speaker - Right Rear

(3) Speaker - Left Rear

(4) Rear Window Defogger Grid - Left (C49)

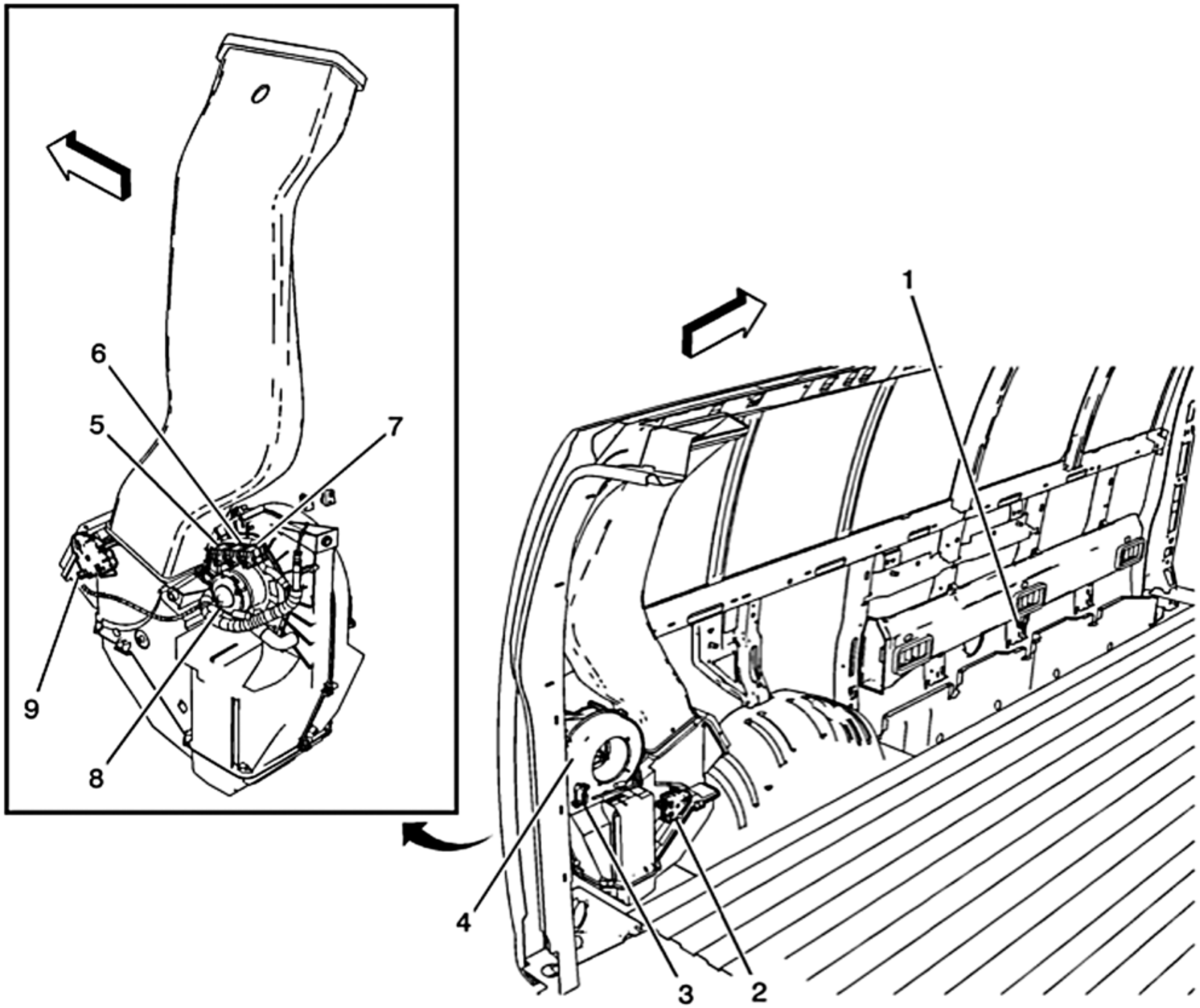
(5) Speaker - Left Cargo Door (US8 or US9)

(6) Door Latch - Cargo

(7) Door Lock Switch - Cargo (AU3)

(8) Speaker - Right Cargo Door (US8 or US9)

Left Rear Cargo Area (Passenger or Cargo)



(1) Inflatable Restraint Side Impact Sensor (SIS) - Left Rear (Passenger with ASF without E26)

(2) Air Temperature Actuator - Auxiliary (C69)

(3) Blower Motor Resistor - Auxiliary (C36 with C69)

(4) HVAC Control Module - Auxiliary (C69)

(5) Blower Motor High Speed Relay - Auxiliary (C36 with C69)

(6) Blower Motor Medium Speed Relay - Auxiliary (C36 with C69)

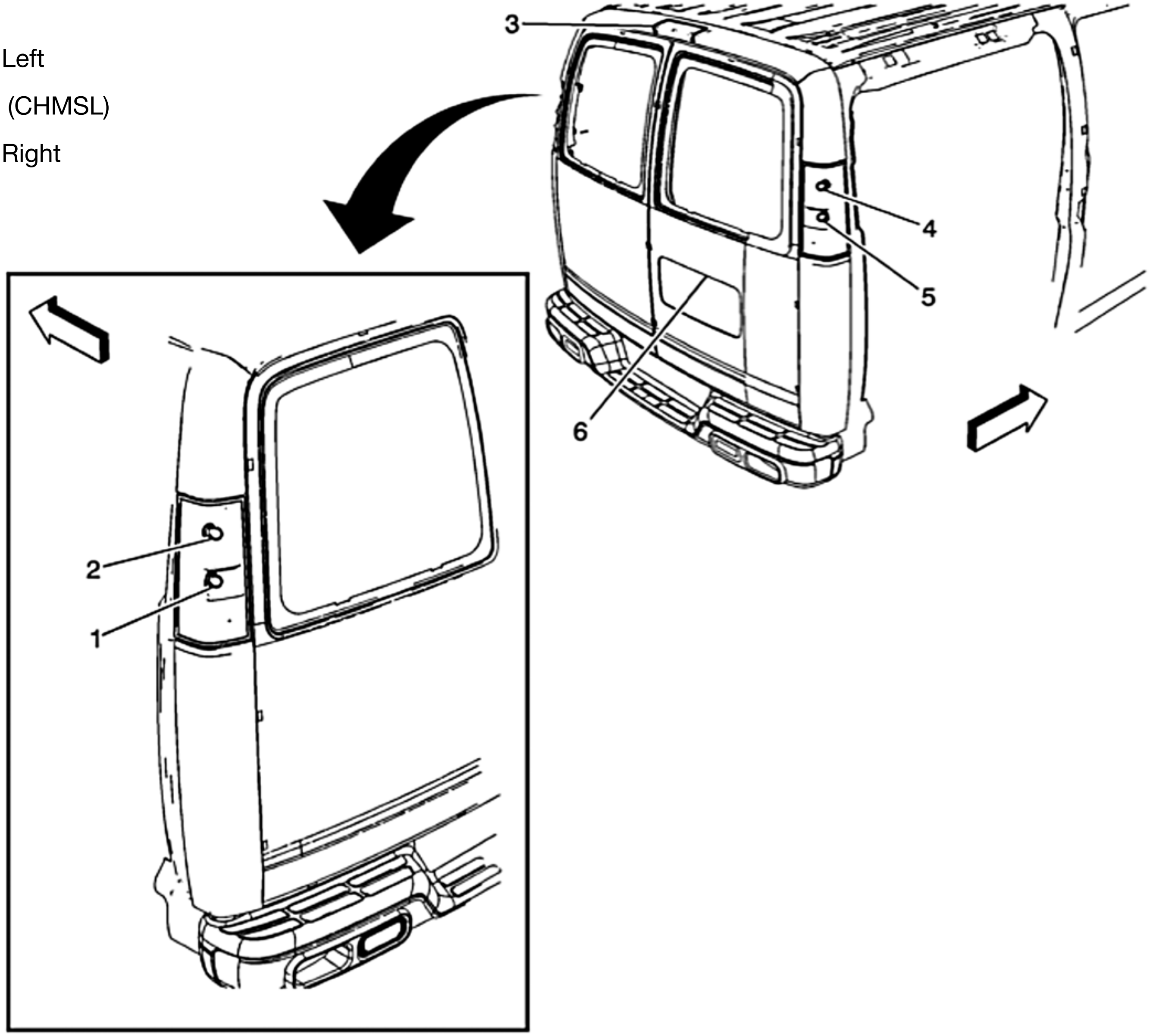
(7) Blower Motor Low Speed Relay - Auxiliary (C36 with C69)

(8) Blower Motor - Auxiliary (C36 with C69)

(9) Mode Actuator - Auxiliary (C69)

Rear Exterior Lights (Passenger or Cargo)

(1) Backup Lamp - Left
(2) Tail/Stop and Turn Signal Lamp - Left
(3) Center High Mounted Stop Lamp (CHMSL)
(4) Tail/Stop and Turn Signal Lamp - Right
(5) Backup Lamp - Right
(6) License Lamp



Front Left Side of Passenger Compartment

(1) Inflatable Restraint Roof Rail Module - Left Front (ASF)

(2) Instrument Panel - Upper Pad

(3) Inflatable Restraint Roof Rail Module - Right Front (ASF)

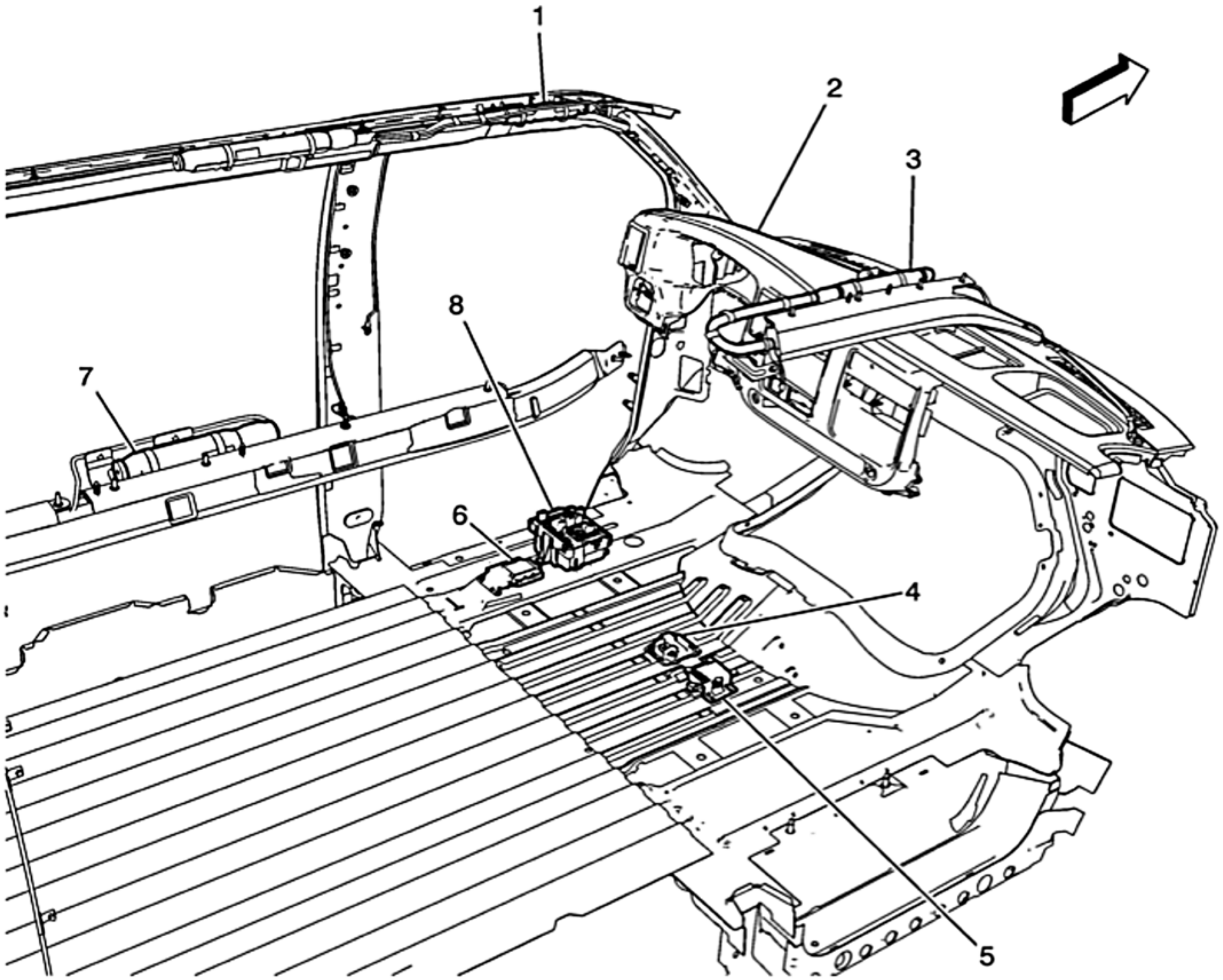
(4) Inflatable Restraint Vehicle Rollover Sensor (ASF)

(5) Yaw and Lateral Accelerometer Sensor (JL4)

(6) Inflatable Restraint Sensing and Diagnostic Module (SDM)

(7) Inflatable Restraint Roof Rail Module - Right Rear (ASF with YA2)

(8) Fuse Block - Body



Driver Seat

(1) Seat Belt Buckle - Driver (Light Duty)

(2) Seat Belt Pretensioner - Driver (Light Duty)

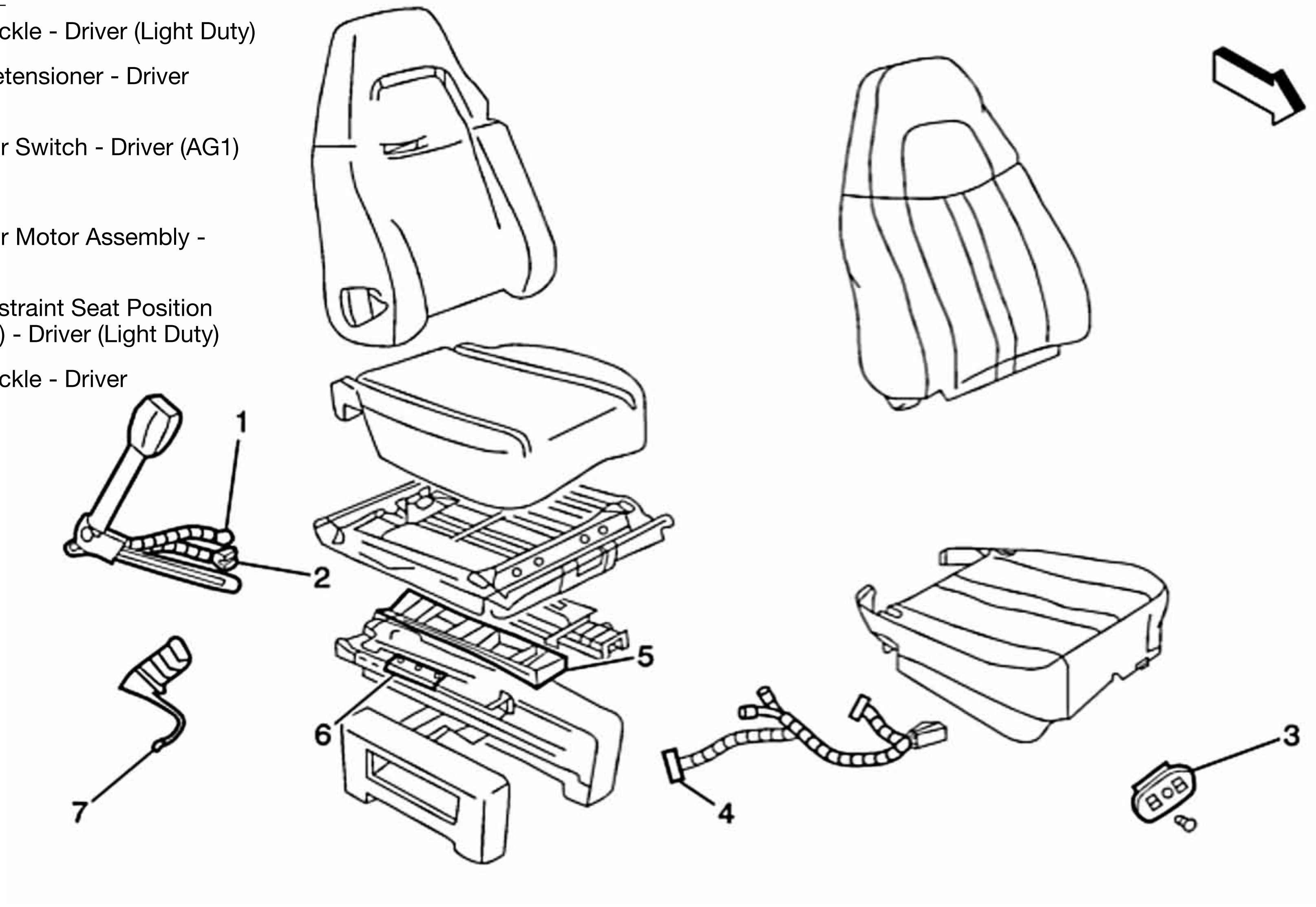
(3) Seat Adjuster Switch - Driver (AG1)

(4) X307

(5) Seat Adjuster Motor Assembly - Driver (AG1)

(6) Inflatable Restraint Seat Position Sensor (SPS) - Driver (Light Duty)

(7) Seat Belt Buckle - Driver (Heavy Duty)



Passenger Seat

(1) Seat Adjuster Switch - Passenger (AG2)

(2) X306

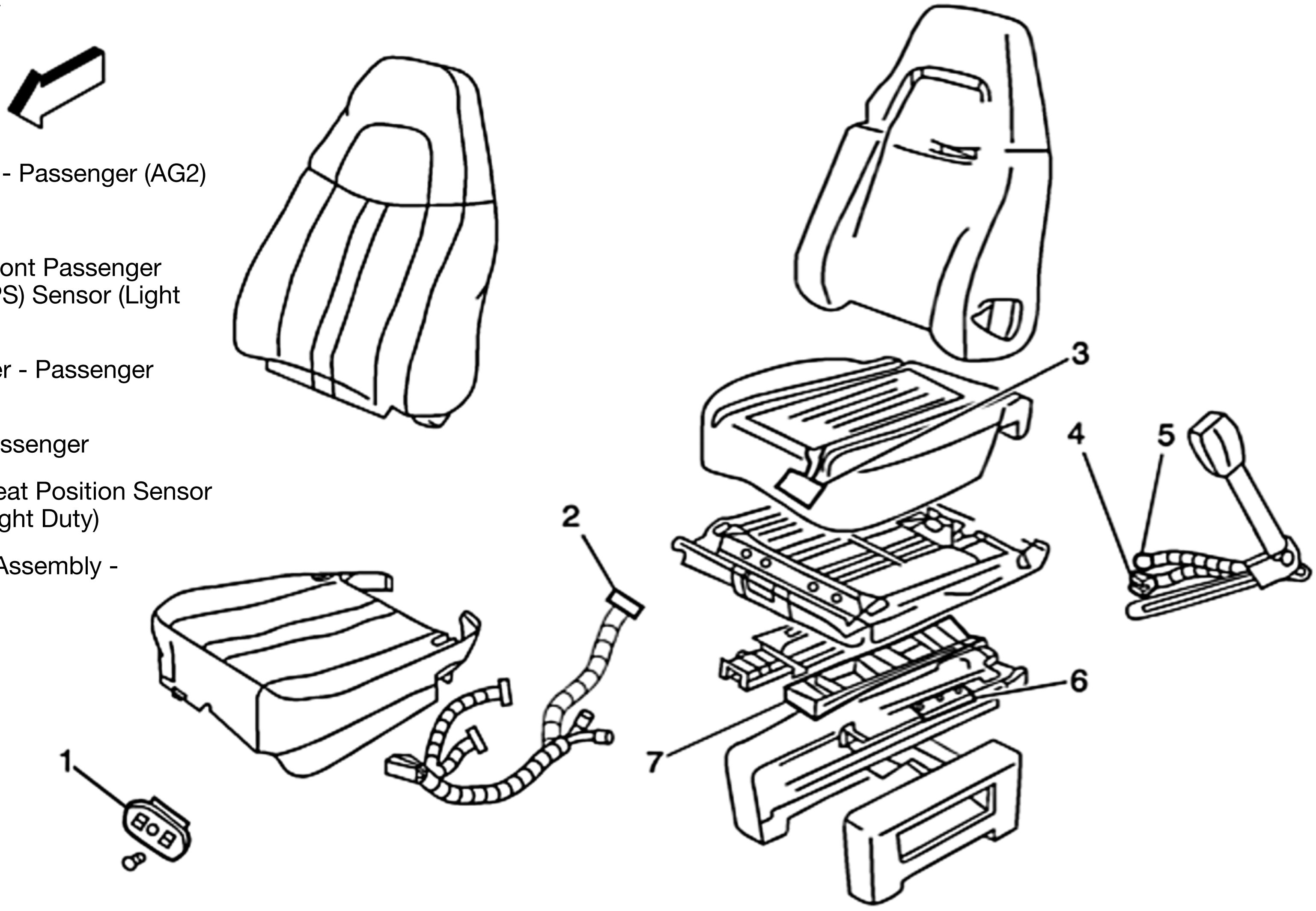
(3) Inflatable Restraint Front Passenger Presence System (PPS) Sensor (Light Duty without YF7)

(4) Seat Belt Pretensioner - Passenger (Light Duty)

(5) Seat Belt Buckle - Passenger

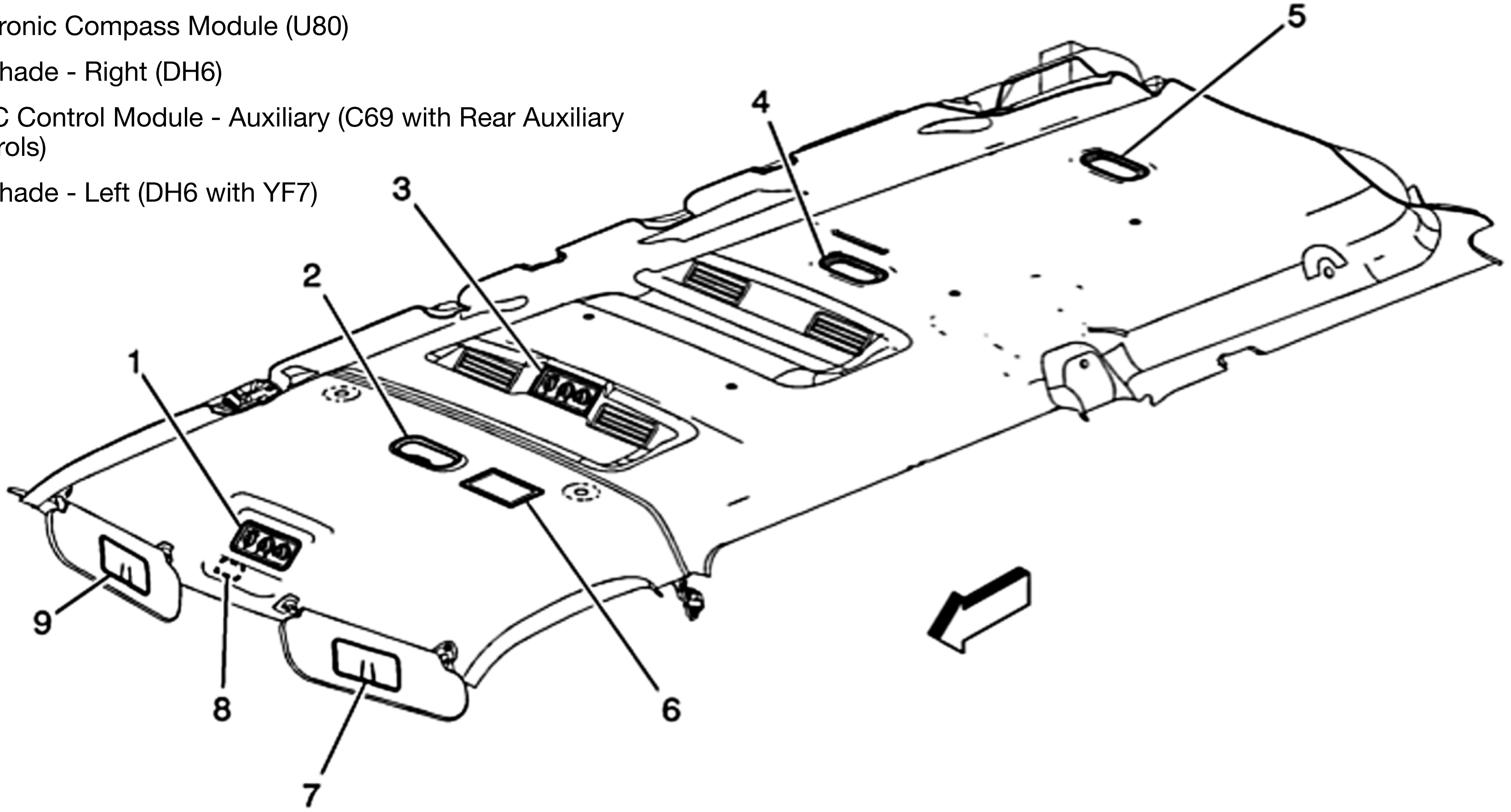
(6) Inflatable Restraint Seat Position Sensor (SPS) - Passenger (Light Duty)

(7) Seat Adjuster Motor Assembly - Passenger (AG2)

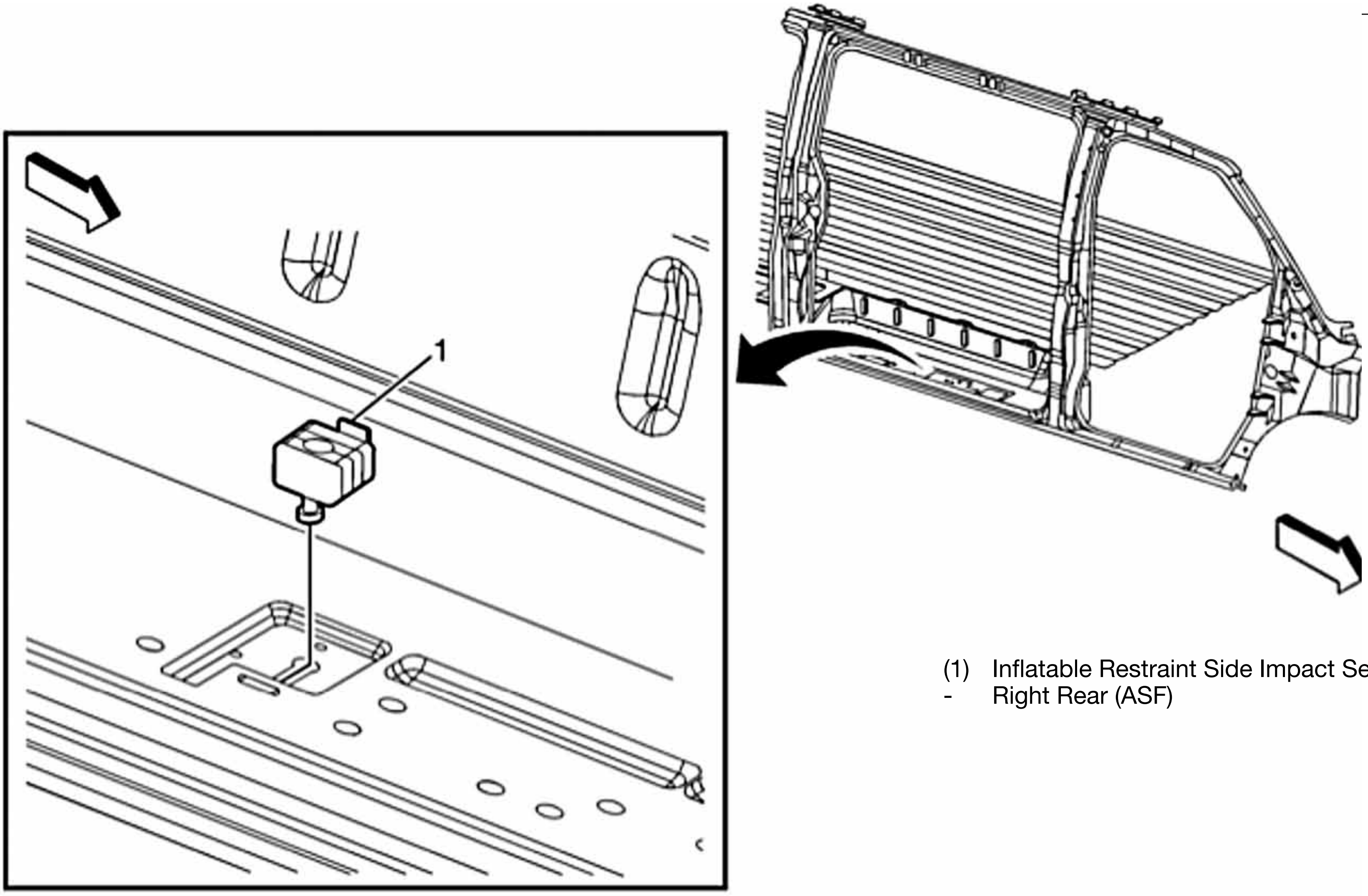


Headliner

(1) HVAC Control Assembly - Front Auxiliary (C69)
(2) Dome/Reading Lamp - Front
(3) HVAC Control Assembly - Rear Auxiliary (C69 with Rear Auxiliary Controls)
(4) Dome/Reading Lamp - Middle (Passenger)
(5) Dome/Reading Lamp - Rear (Passenger)/Dome Lamp (Cargo)
(6) Electronic Compass Module (U80)
(7) Sunshade - Right (DH6)
(8) HVAC Control Module - Auxiliary (C69 with Rear Auxiliary Controls)
(9) Sunshade - Left (DH6 with YF7)

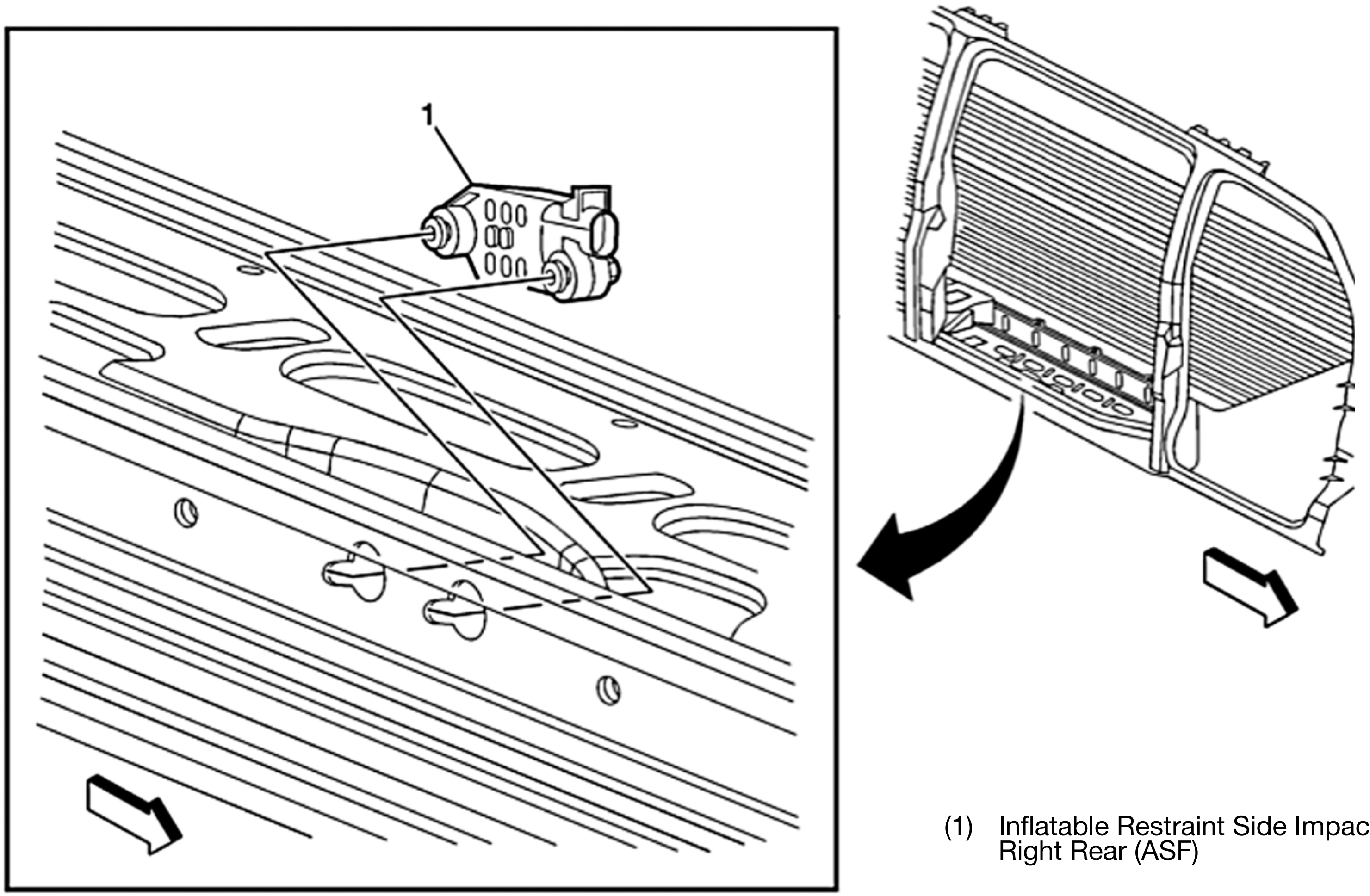


Right Rear Frame Rail (Passenger with E24)



(1) Inflatable Restraint Side Impact Sensor (SIS)
- Right Rear (ASF)

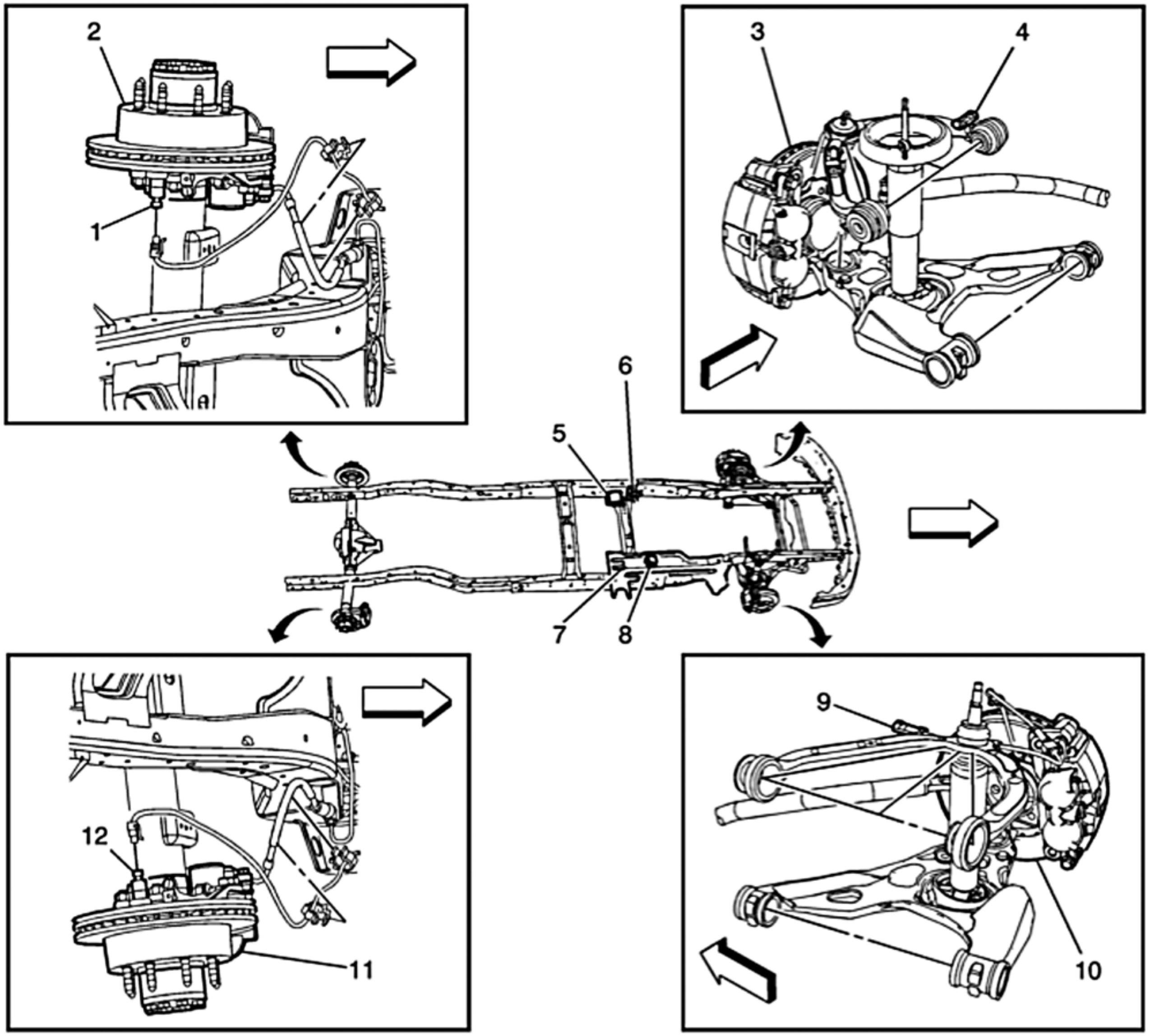
Right Rear Frame Rail (Passenger with YA2)



(1) Inflatable Restraint Side Impact Sensor (SIS) - Right Rear (ASF)

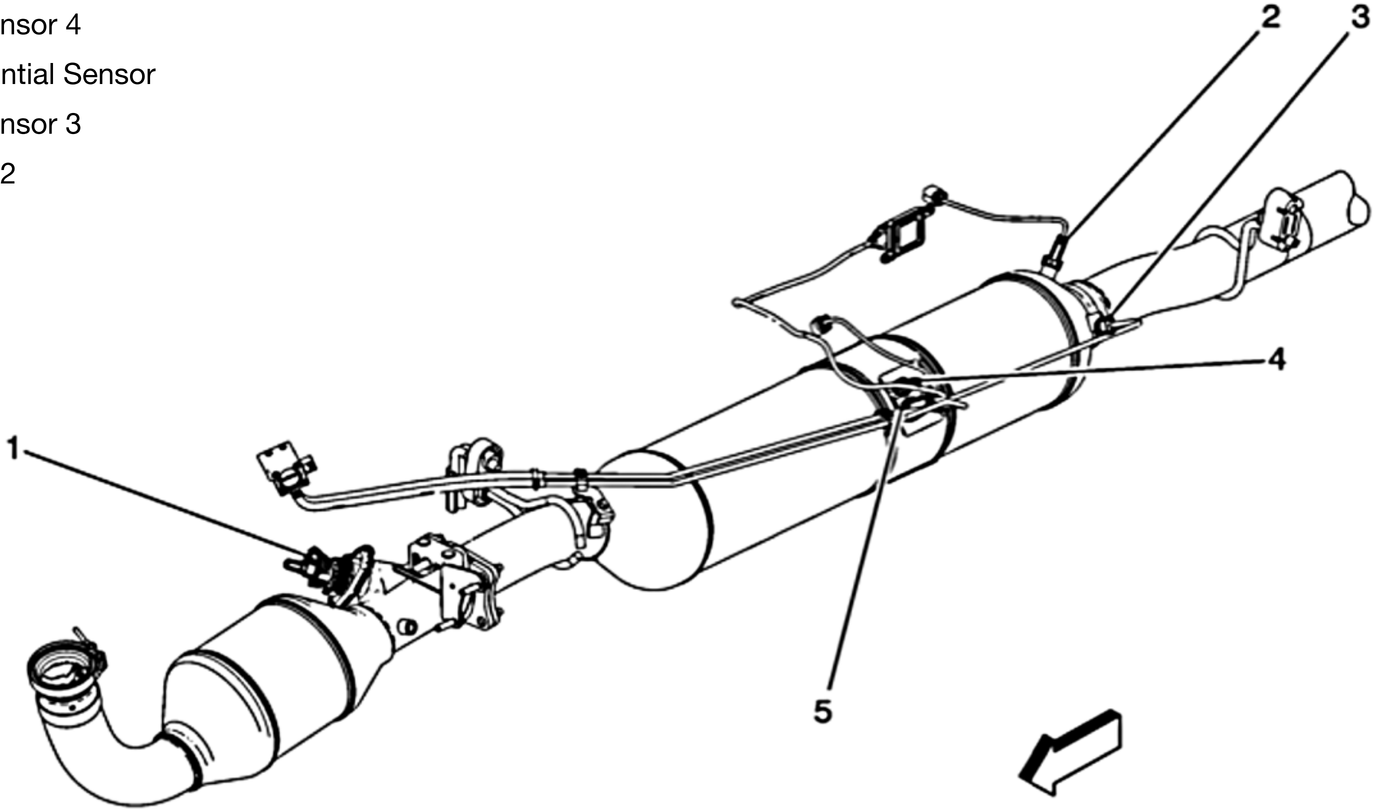
Frame and Underbody

(1) Wheel Speed Sensor (WSS) - Left Rear (JL4)
(2) Rotor - Left Rear
(3) Rotor - Left Front
(4) Wheel Speed Sensor (WSS) - Left Front
(5) Electronic Brake Control Module (EBCM)
(6) Brake Pressure Differential Switch (Light Duty)
(7) Floor Panel - Right Front
(8) Yaw and Lateral Accelerometer Sensor (JL4)
(9) Wheel Speed Sensor (WSS) - Right Front
(10) Rotor - Right Front
(11) Rotor - Right Rear
(12) Wheel Speed Sensor (WSS) - Right Rear (JL4)

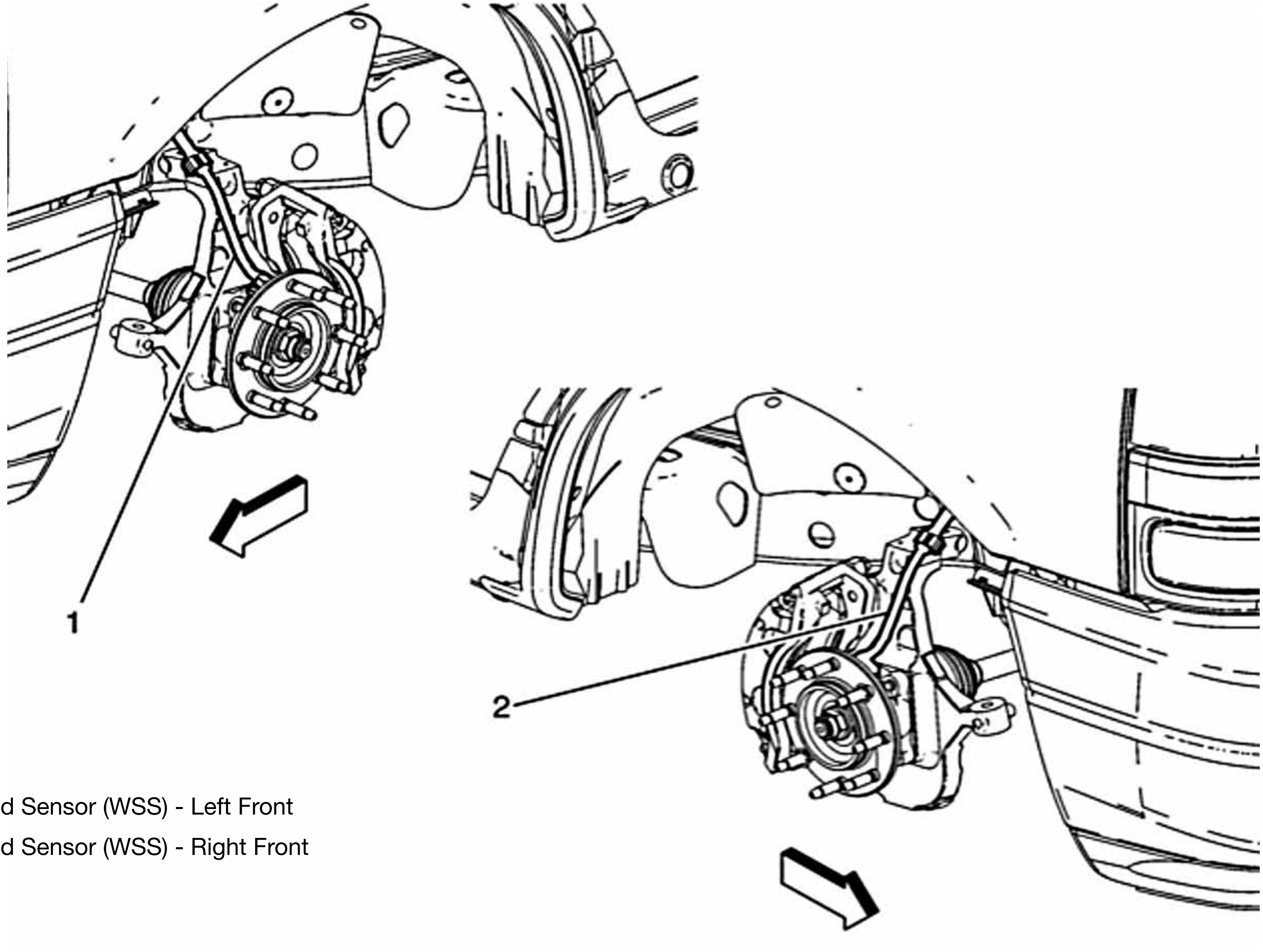


Front of Exhaust System Components (LGH)

(1) Reductant Injector
(2) Exhaust Temperature Sensor 4
(3) Exhaust Pressure Differential Sensor
(4) Exhaust Temperature Sensor 3
(5) Nitrogen Oxides Sensor 2



Front Wheel Speed Sensor Components (LGH)

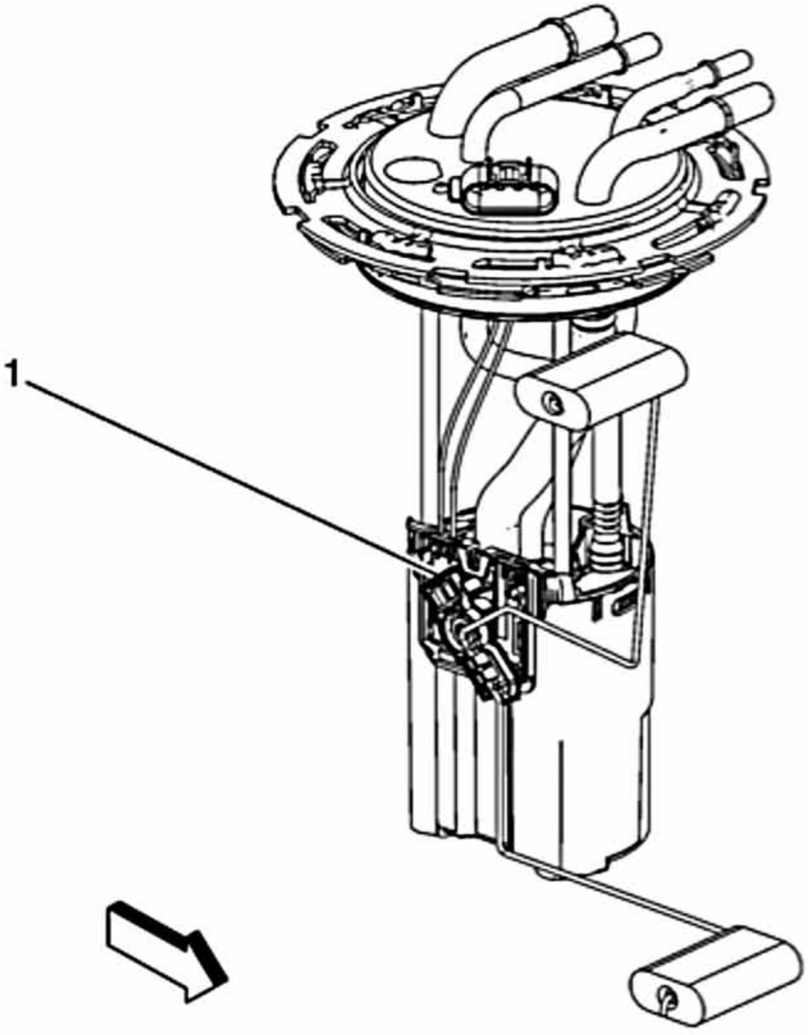


(1) Wheel Speed Sensor (WSS) - Left Front

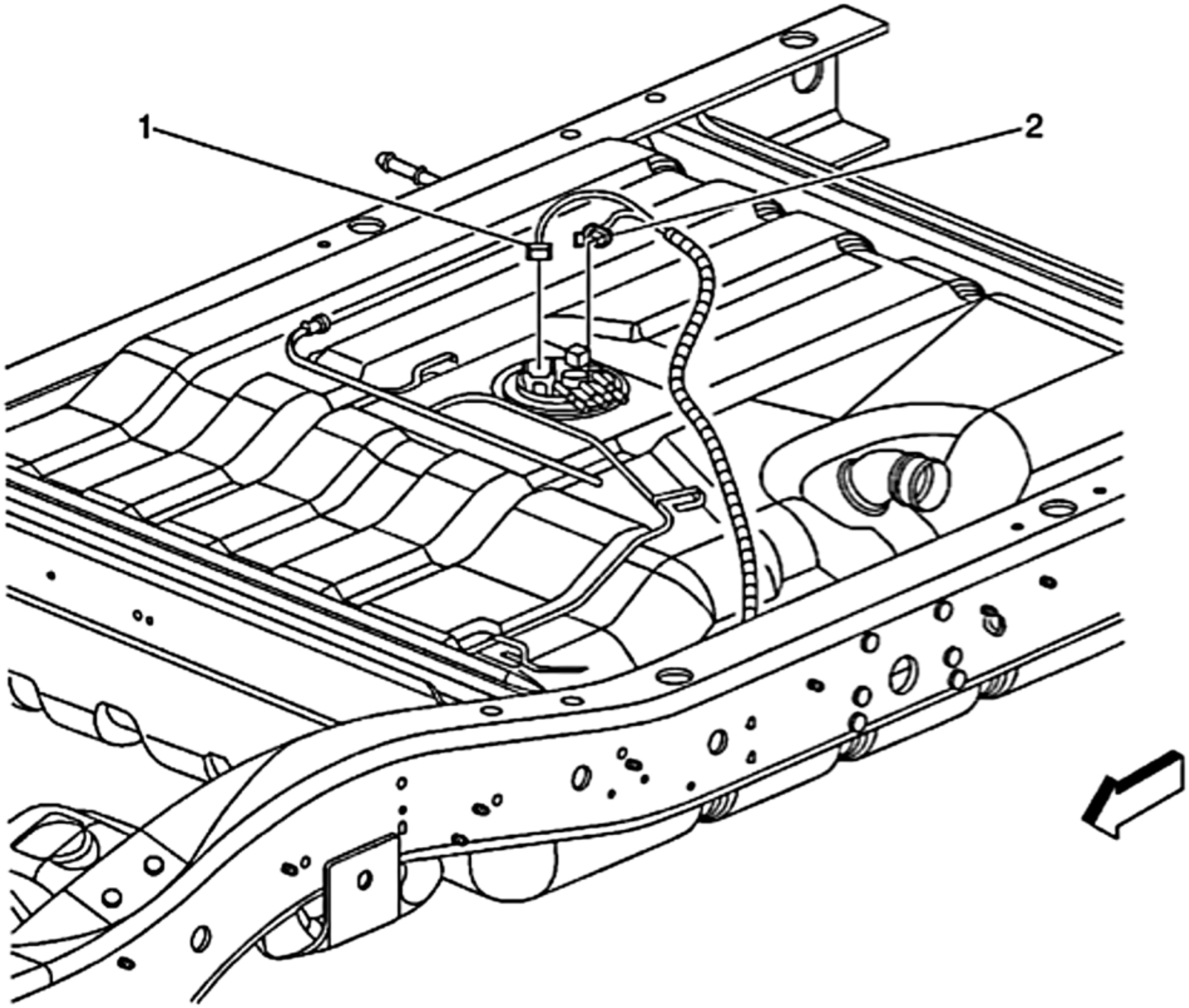
(2) Wheel Speed Sensor (WSS) - Right Front

Inside of Fuel Tank Components (LGH)

(1) Fuel Level Sensor



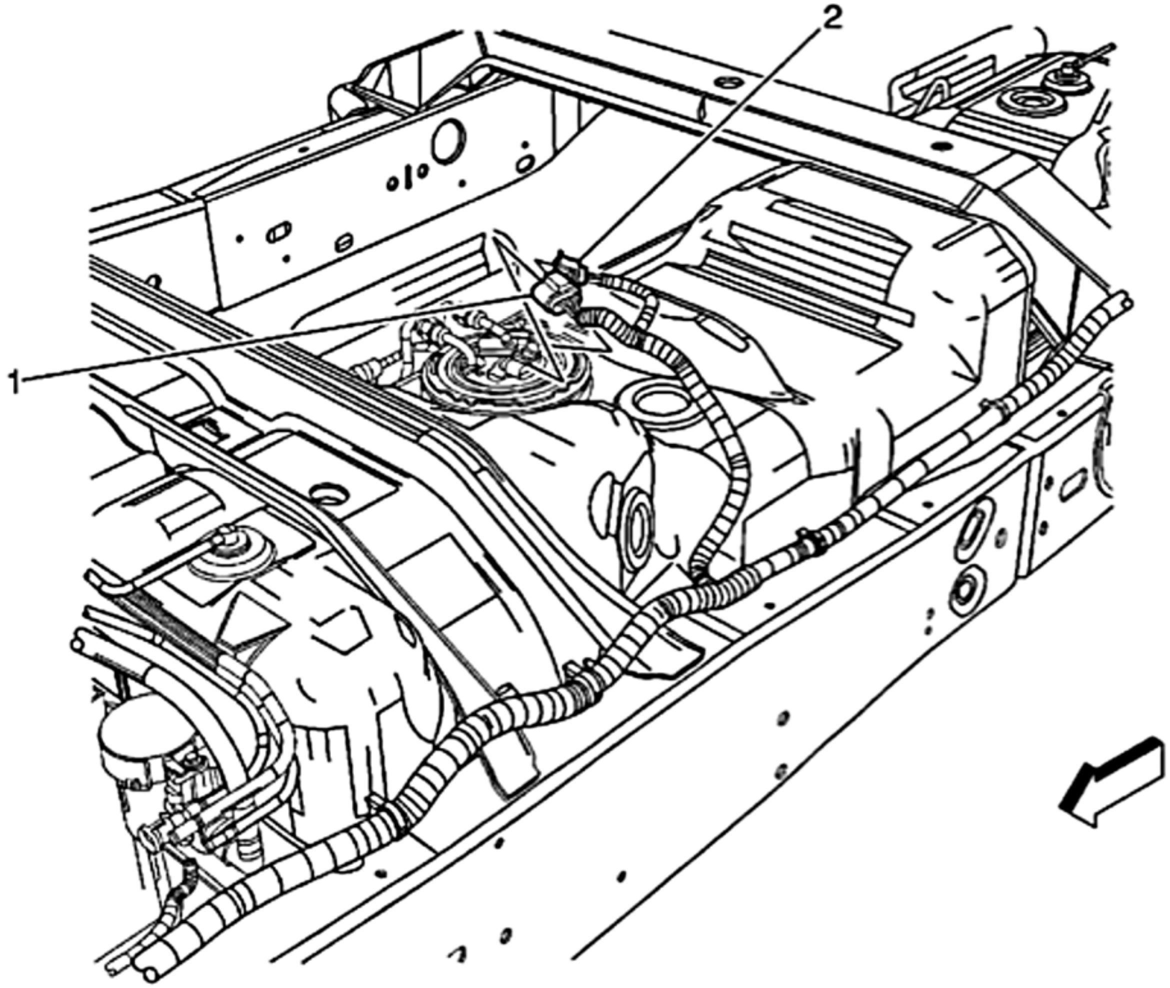
Fuel Tank (NE7)



(1) Fuel Tank Pressure (FTP) Sensor Connector (Gas)

(2) Fuel Pump and Sender Assembly Connector (Gas)/Fuel Level Sensor (Diesel)

Fuel Tank (without NE7)

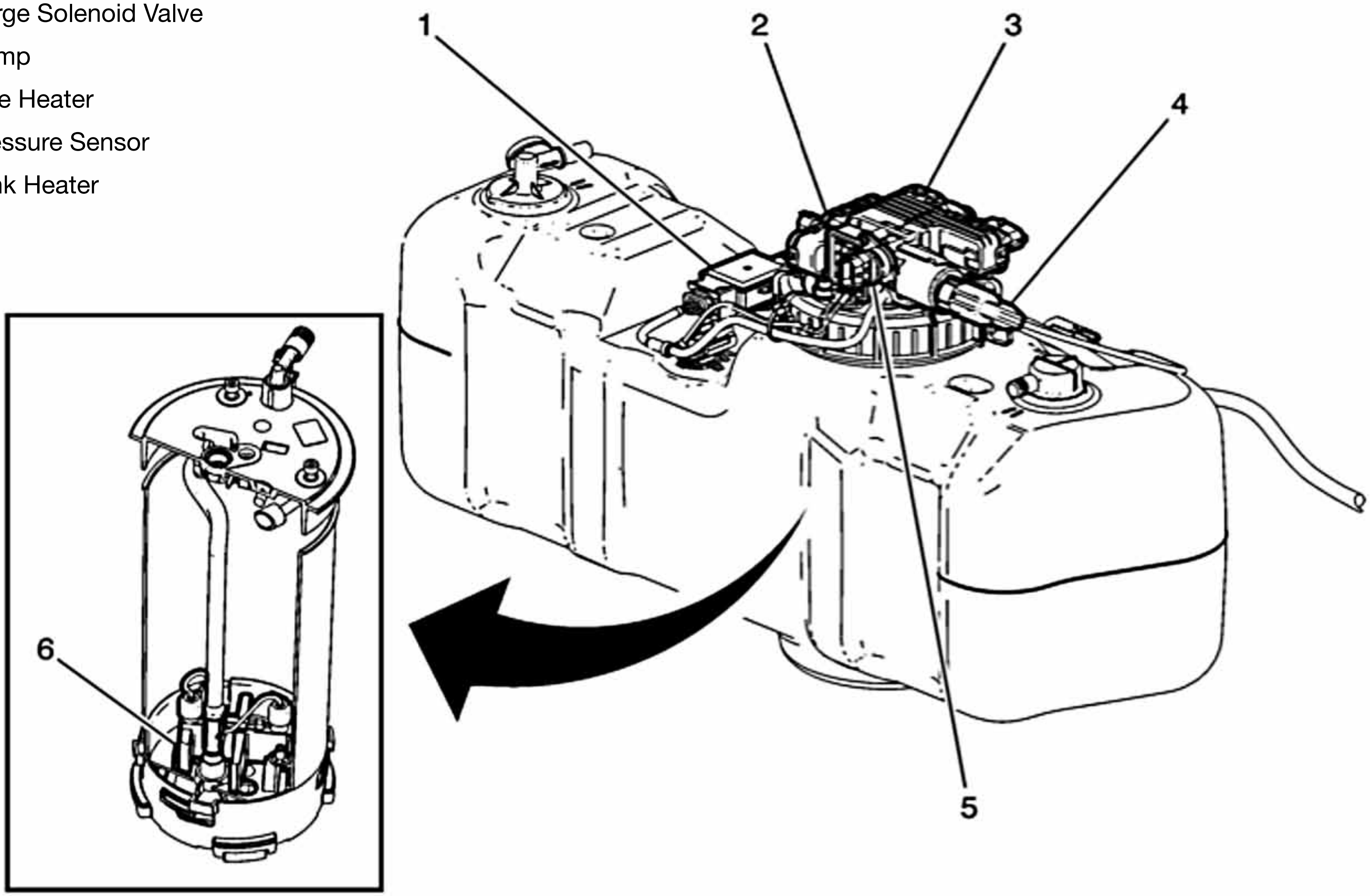


(1) Fuel Pump and Sender Assembly Connector (Gas)/Fuel Level Sensor (Diesel)

(2) Fuel Tank Pressure (FTP) Sensor Connector (Gas)

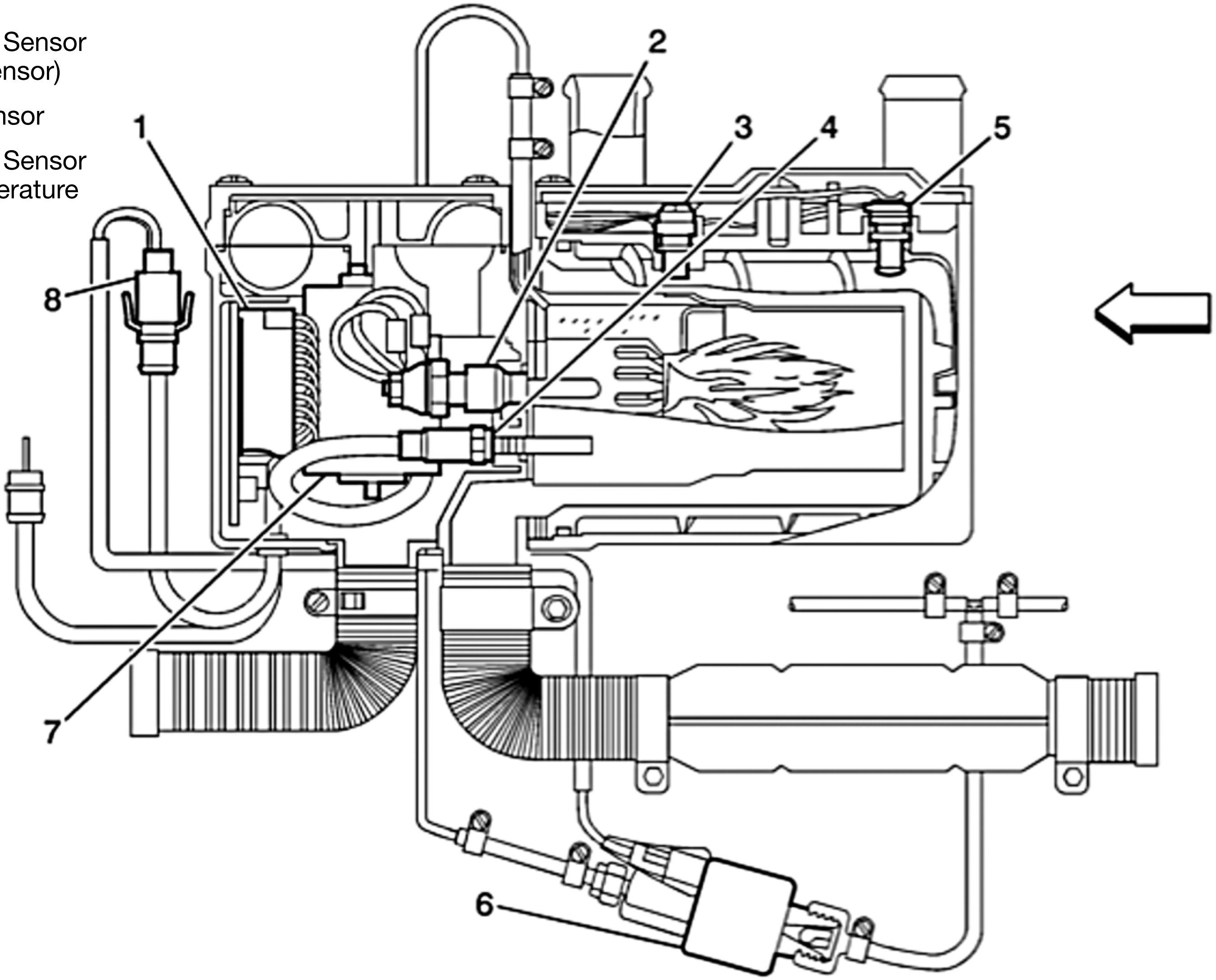
Reductant Tank Components (LGH)

(1) Reductant Sensor Module
(2) Reductant Purge Solenoid Valve
(3) Reductant Pump
(4) Reductant Line Heater
(5) Reductant Pressure Sensor
(6) Reductant Tank Heater



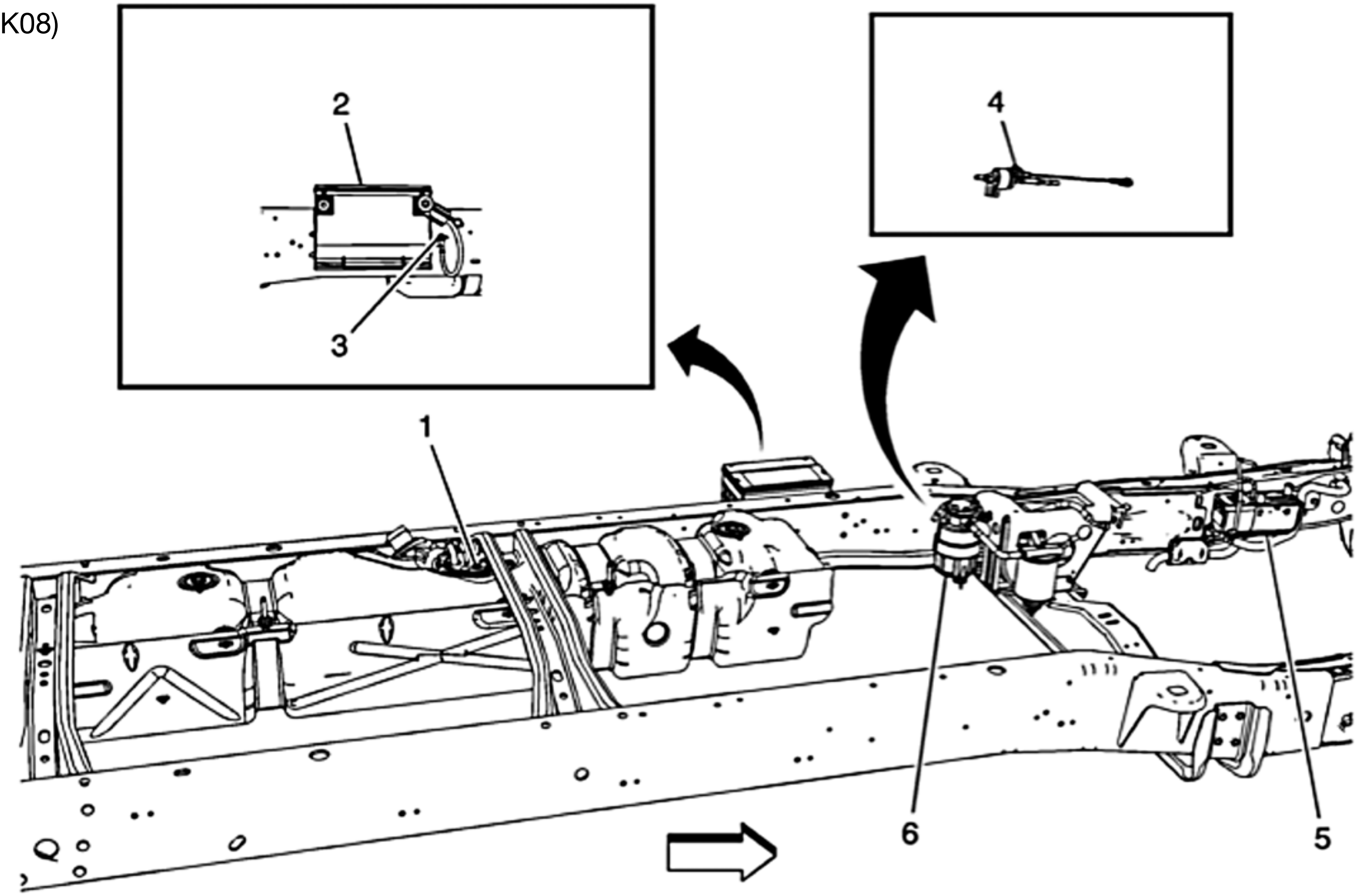
Coolant Heater (K08)

(1) Coolant Heater Control Module
(2) Coolant Heater Glow Plug
(3) Coolant Heater Air Temperature Sensor (Coolant Heater Temperature Sensor)
(4) Coolant Heater Combustion Sensor
(5) Coolant Heater Air Temperature Sensor (Coolant Heater Overheat Temperature Sensor)
(6) Coolant Heater Fuel Pump
(7) Coolant Heater Blower Motor
(8) Coolant Heater Connector



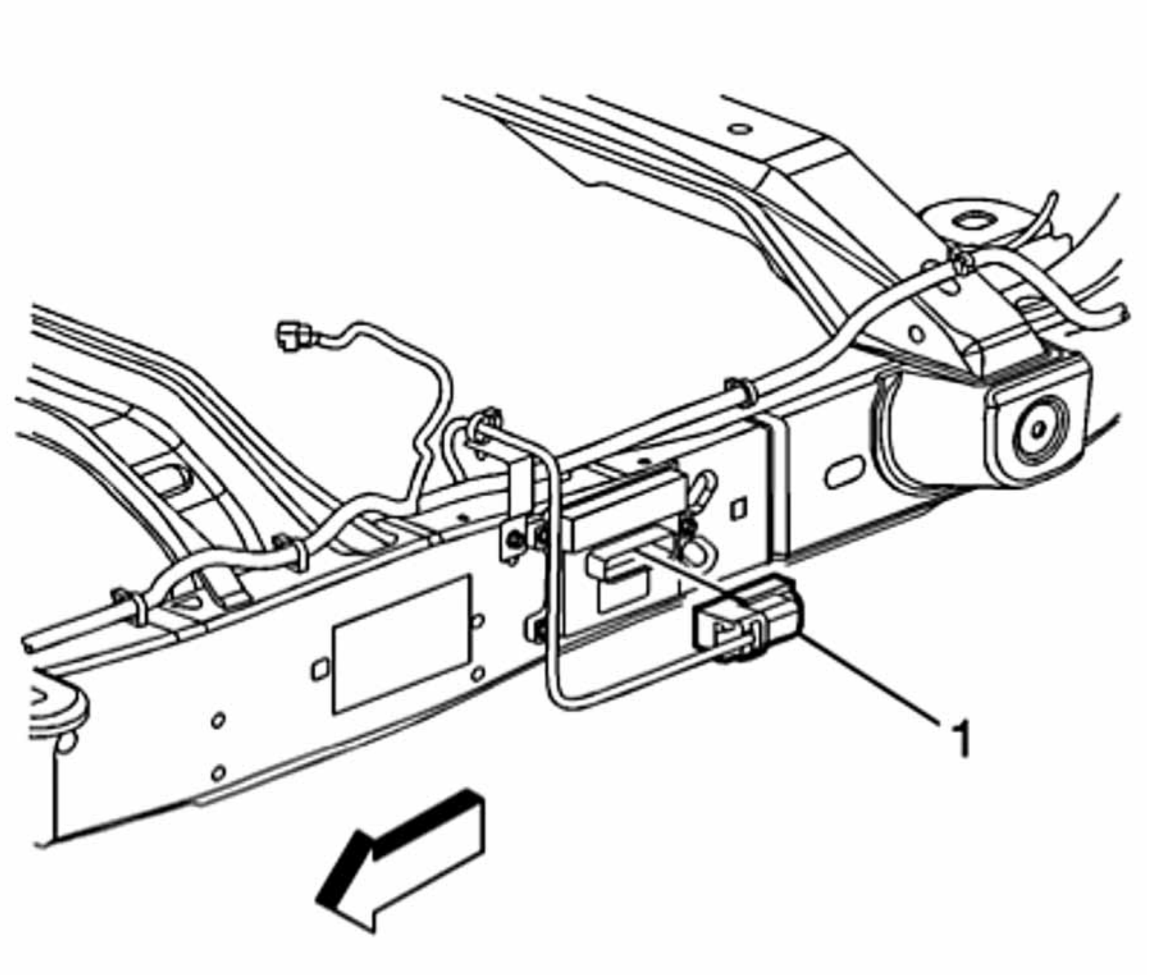
Left Side Frame (LMM or LGH)

(1) Fuel Level Sensor Connector
(2) Battery - Auxiliary
(3) G305
(4) Coolant Heater Fuel Pump (K08)
(5) Coolant Heater (K08)
(6) Fuel Pump



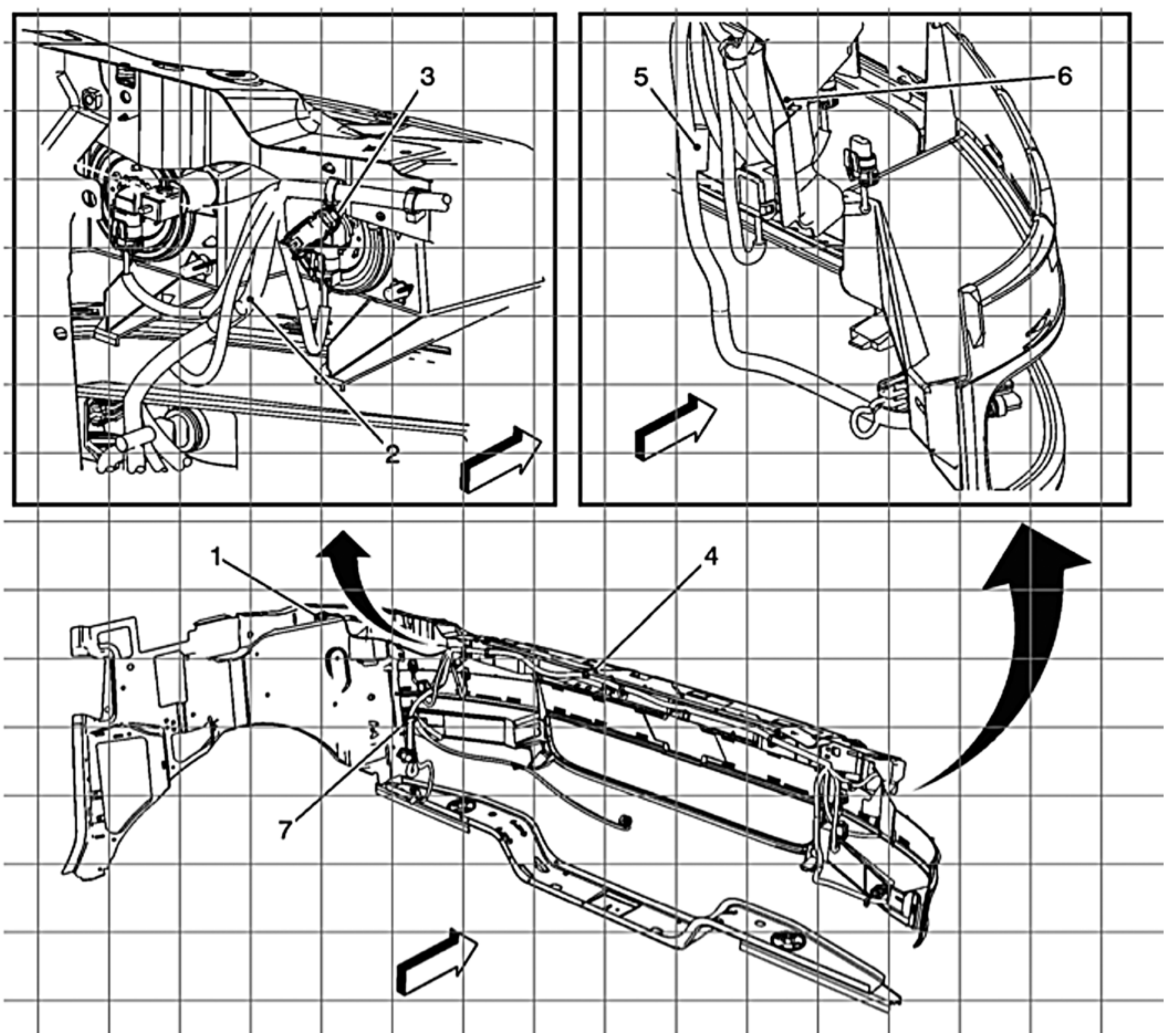
Left Rear Frame Rail (LMF)

(1) Fuel Pump Flow Control Module



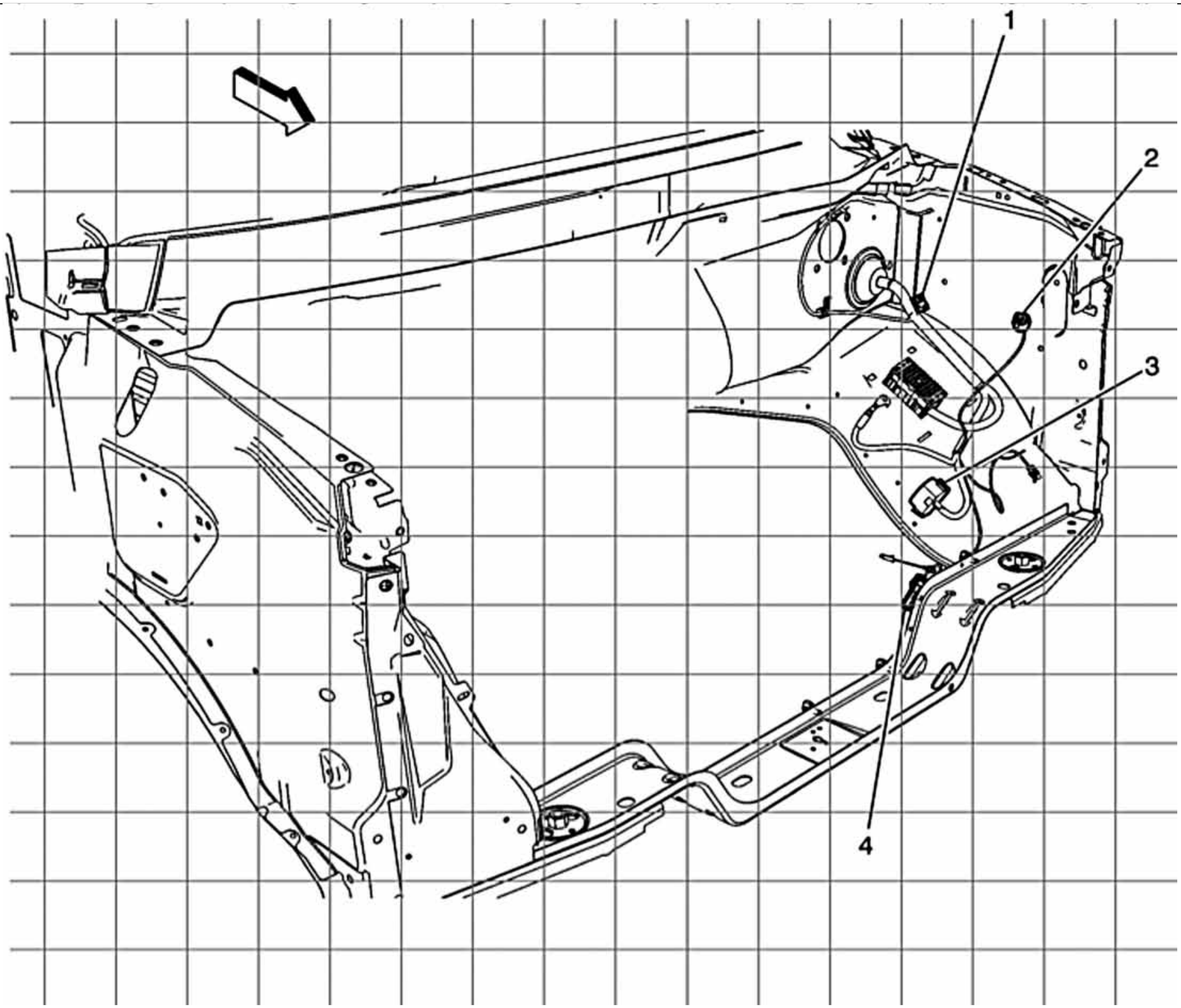
Forward Lamp Harness Routing

(1) G100
(2) J110
(3) X150 (UFA)
(4) J121
(5) J118
(6) G101
(7) J122



Instrument Panel Harness Routing - Front Engine Compartment

(1) X141 (UJ1)
(2) X150 (UFA)
(3) X100
(4) X104



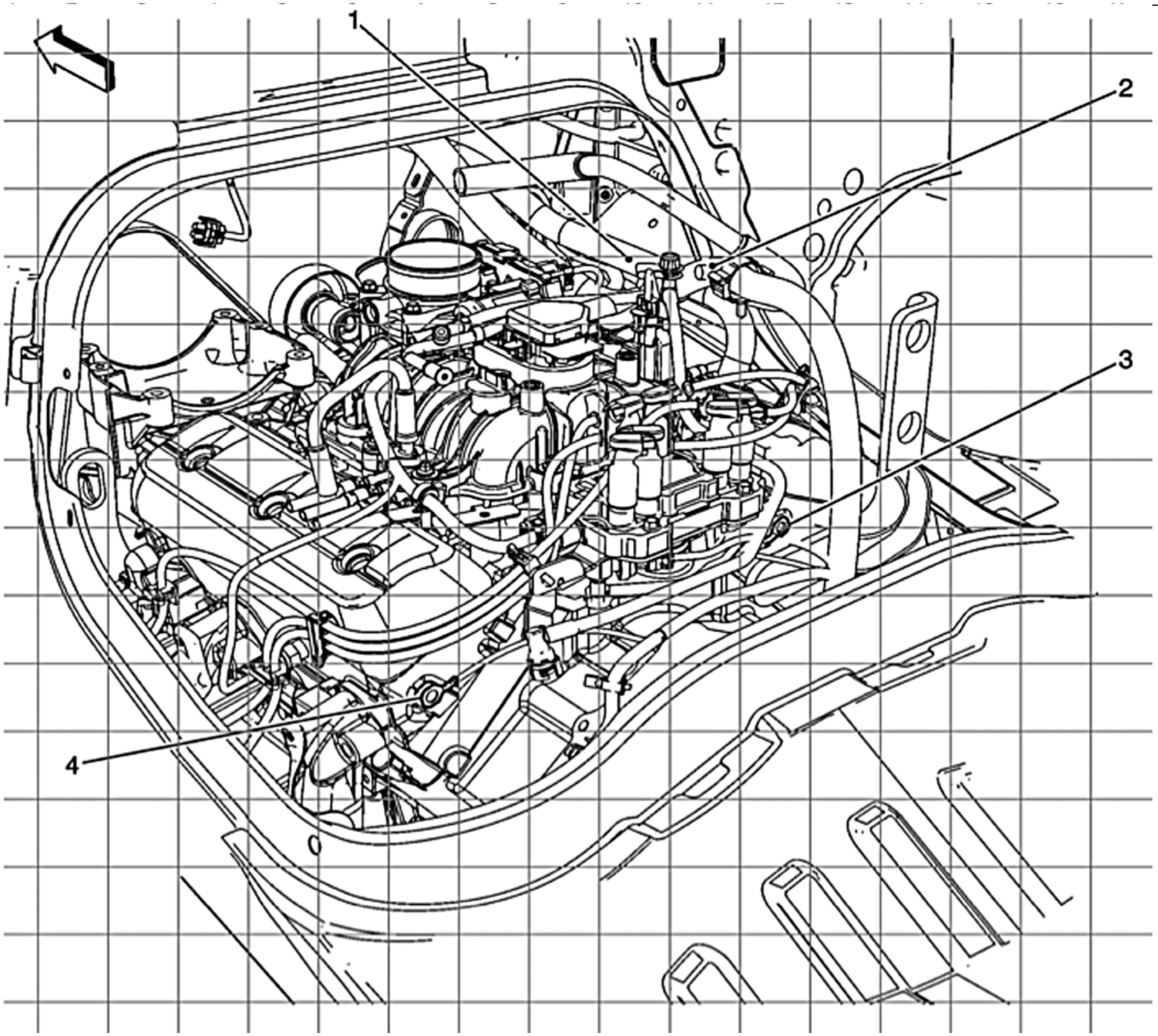
Engine Harness Routing - Left Rear (LU3)

(1) J101

(2) J102

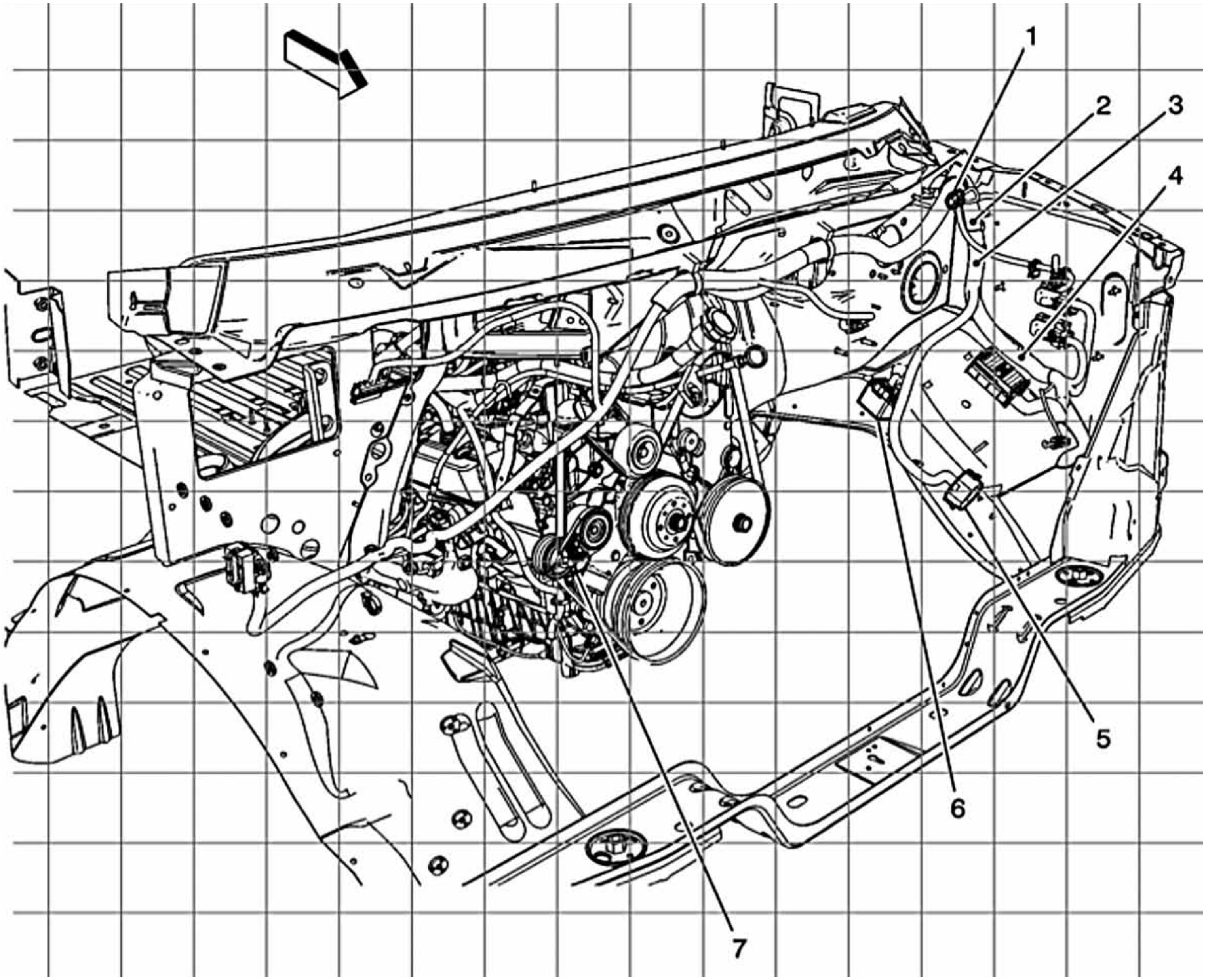
(3) G102

(4) G103



Engine Harness Routing - Front (LU3)

(1)	X109
(2)	J115
(3)	J120
(4)	J123
(5)	X100
(6)	X101
(7)	X176



Engine Harness Routing - Front (LMF)

(1) X109

(2) J115

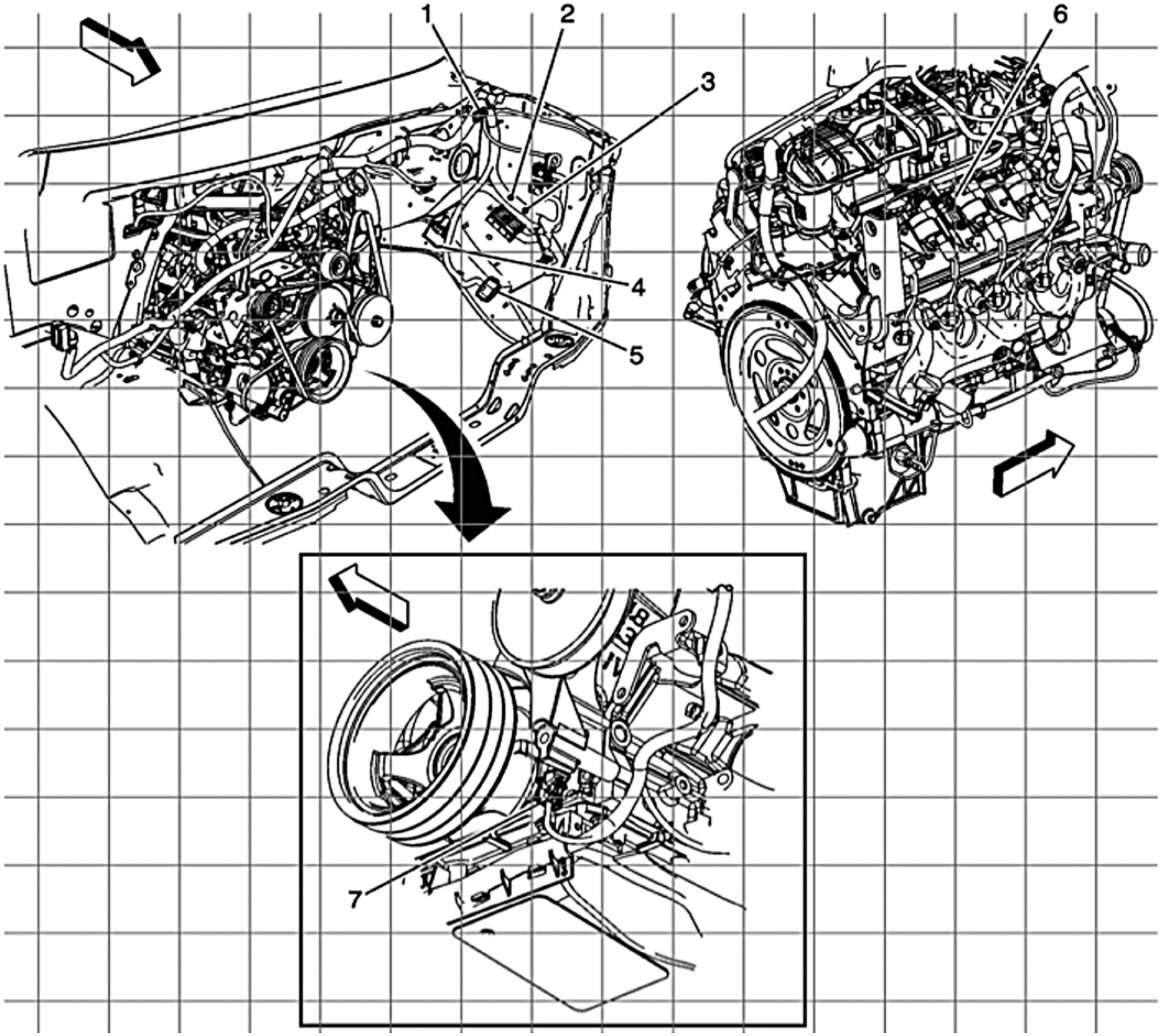
(3) J123

(4) X101

(5) X100

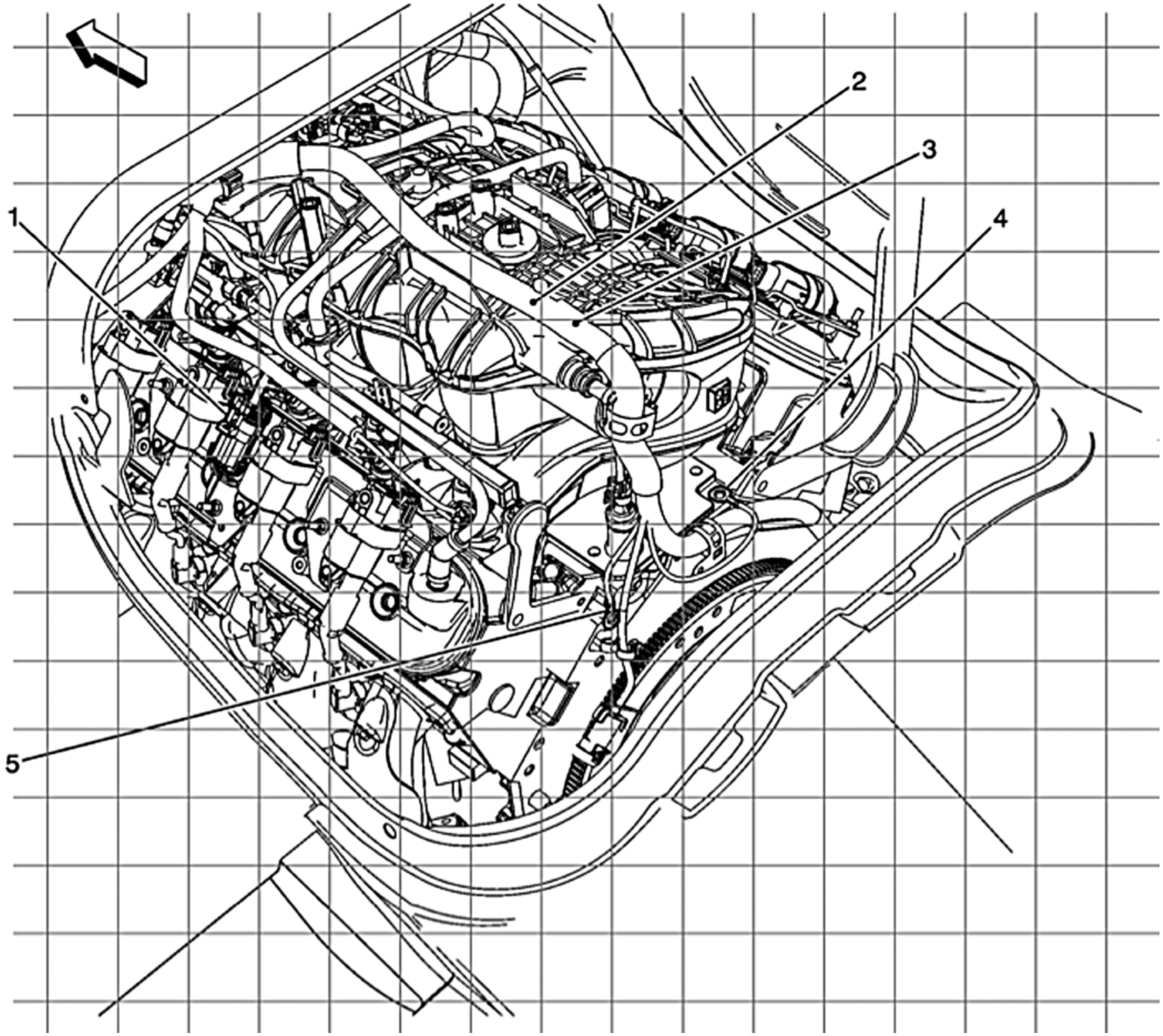
(6) X127

(7) X177



Engine Harness Routing - Left Rear (LMF)

(1)	X126
(2)	J102
(3)	J101
(4)	G102
(5)	G103



Engine Harness Routing - Front (LC8, L20, or L96)

(1) X109

(2) J115

(3) J123

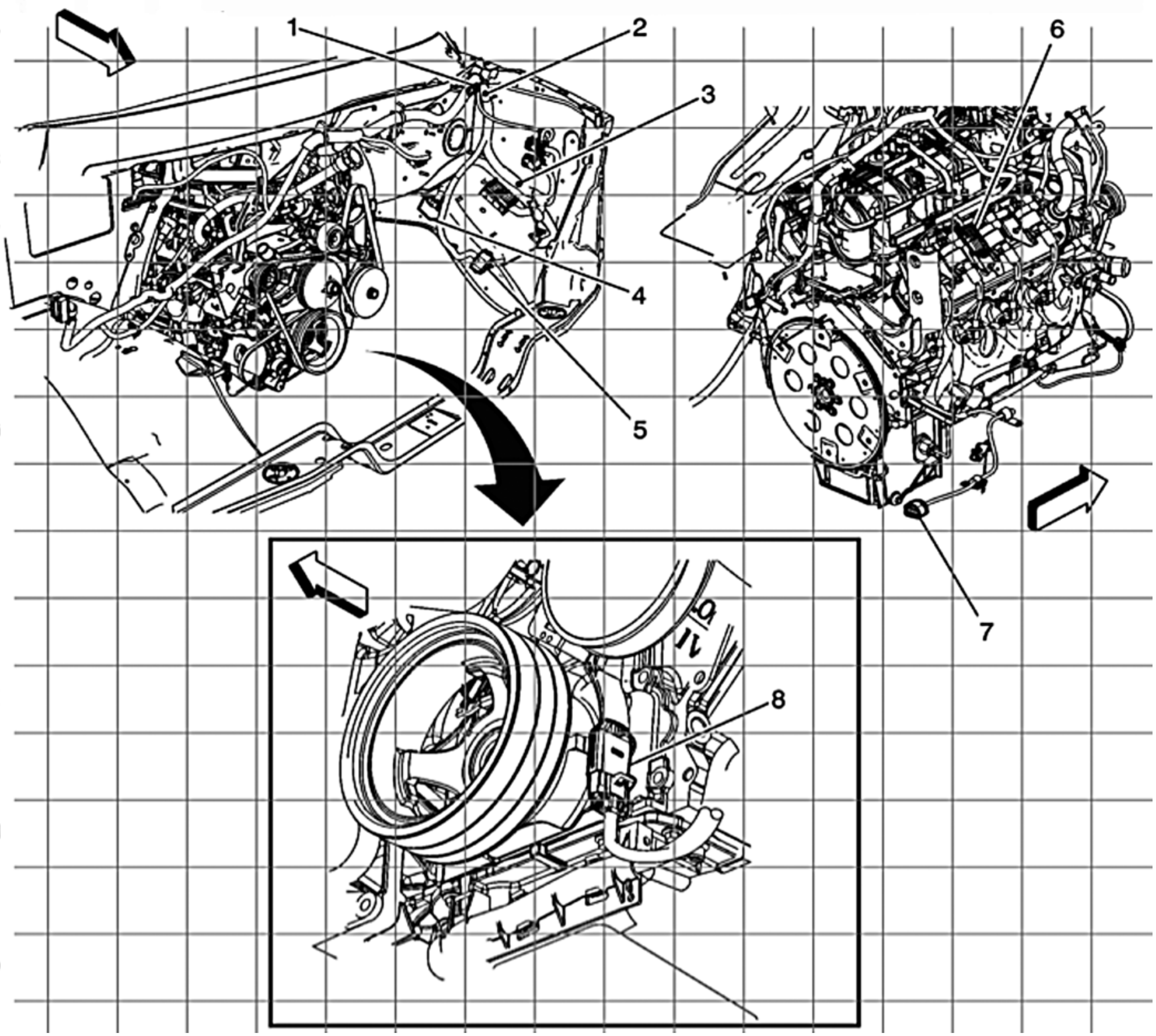
(4) X101

(5) X100

(6) X126

(7) X128 (Cutaway)

(8) X177



Engine Harness Routing - Left Rear (LC8, L20, or L96)

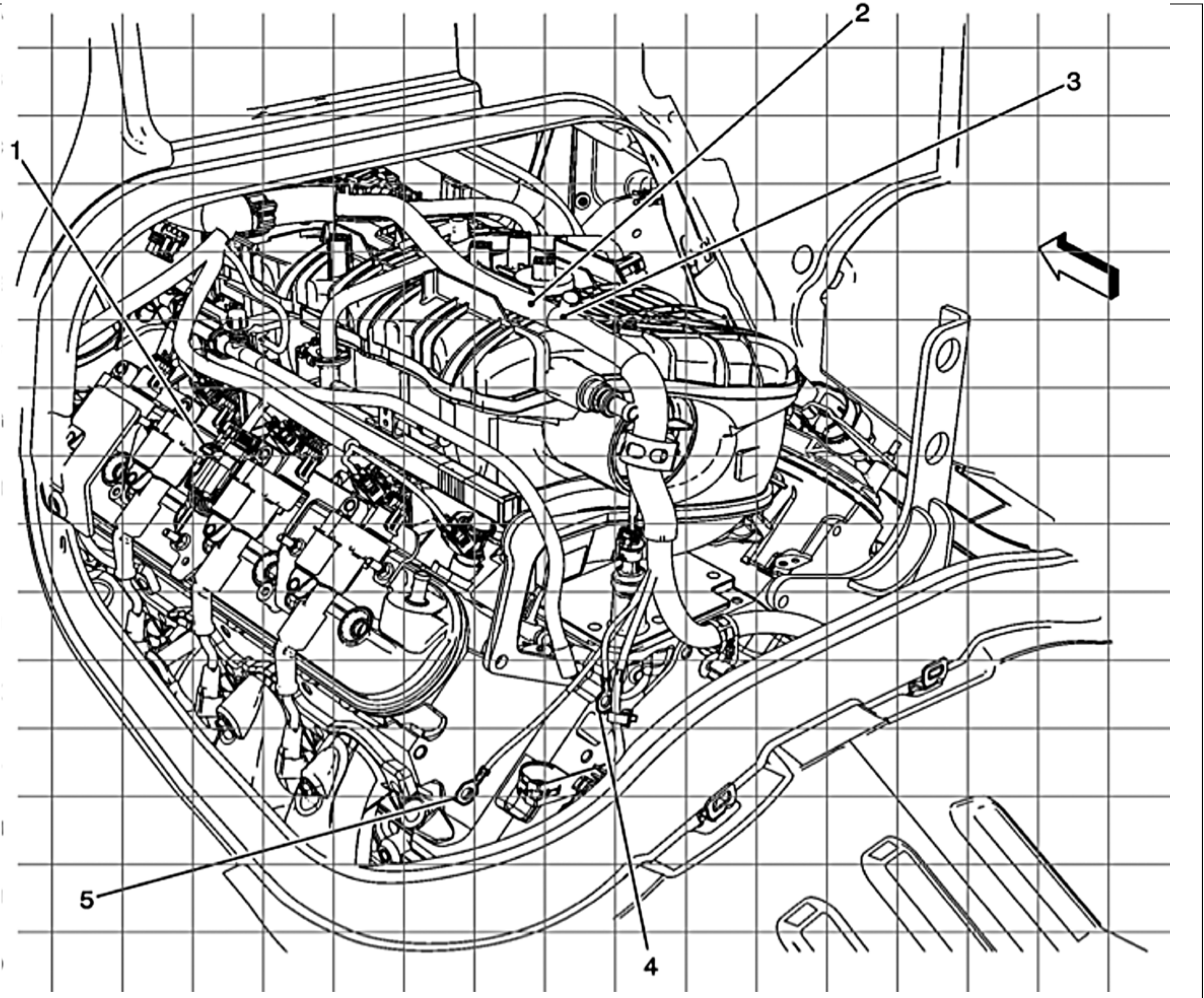
(1) X126

(2) J101

(3) J102

(4) G103

(5) G102



Left Front of Engine Harness Routing (LGH)

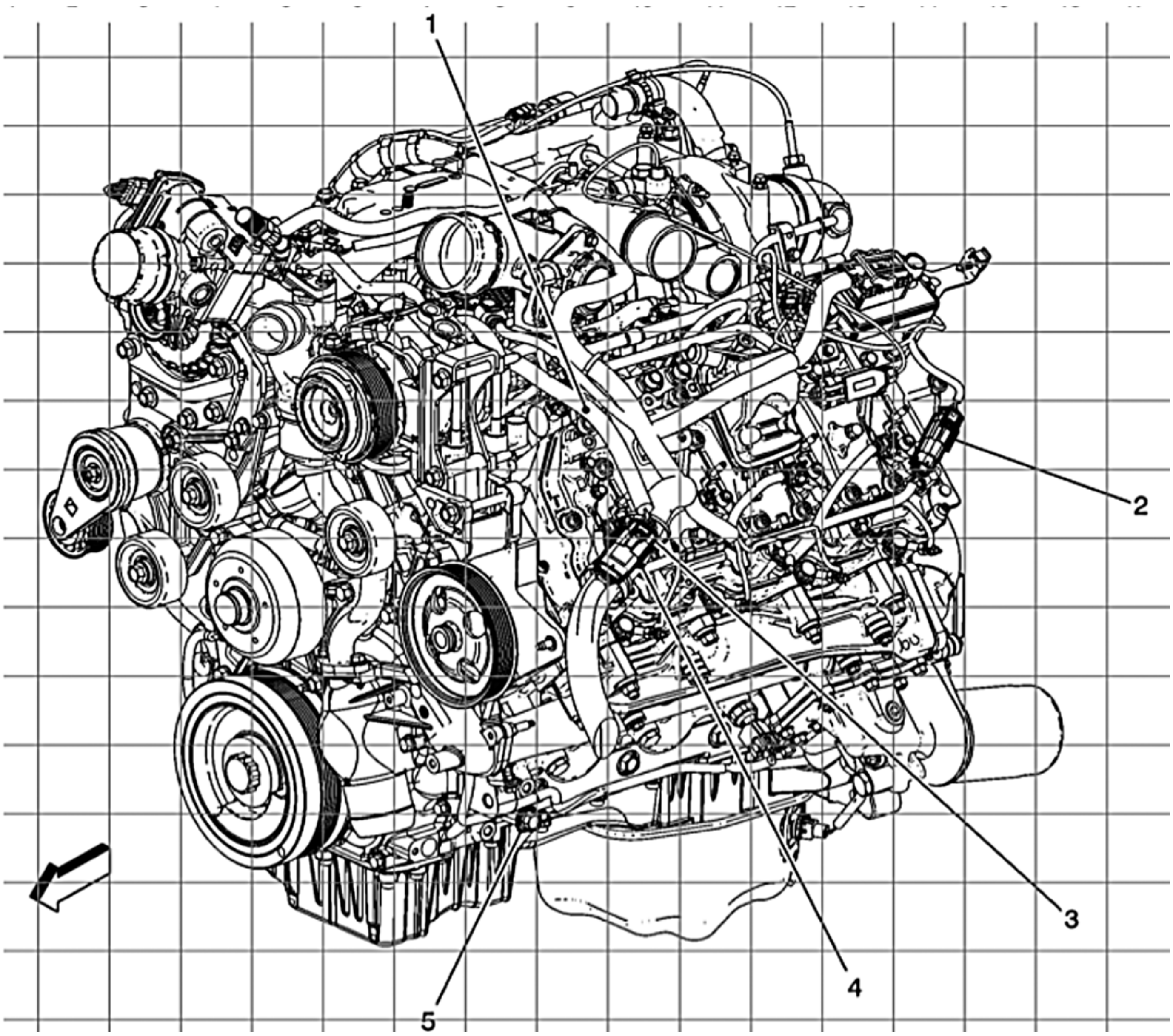
(1) J164

(2) X112

(3) X110

(4) J160

(5) G110

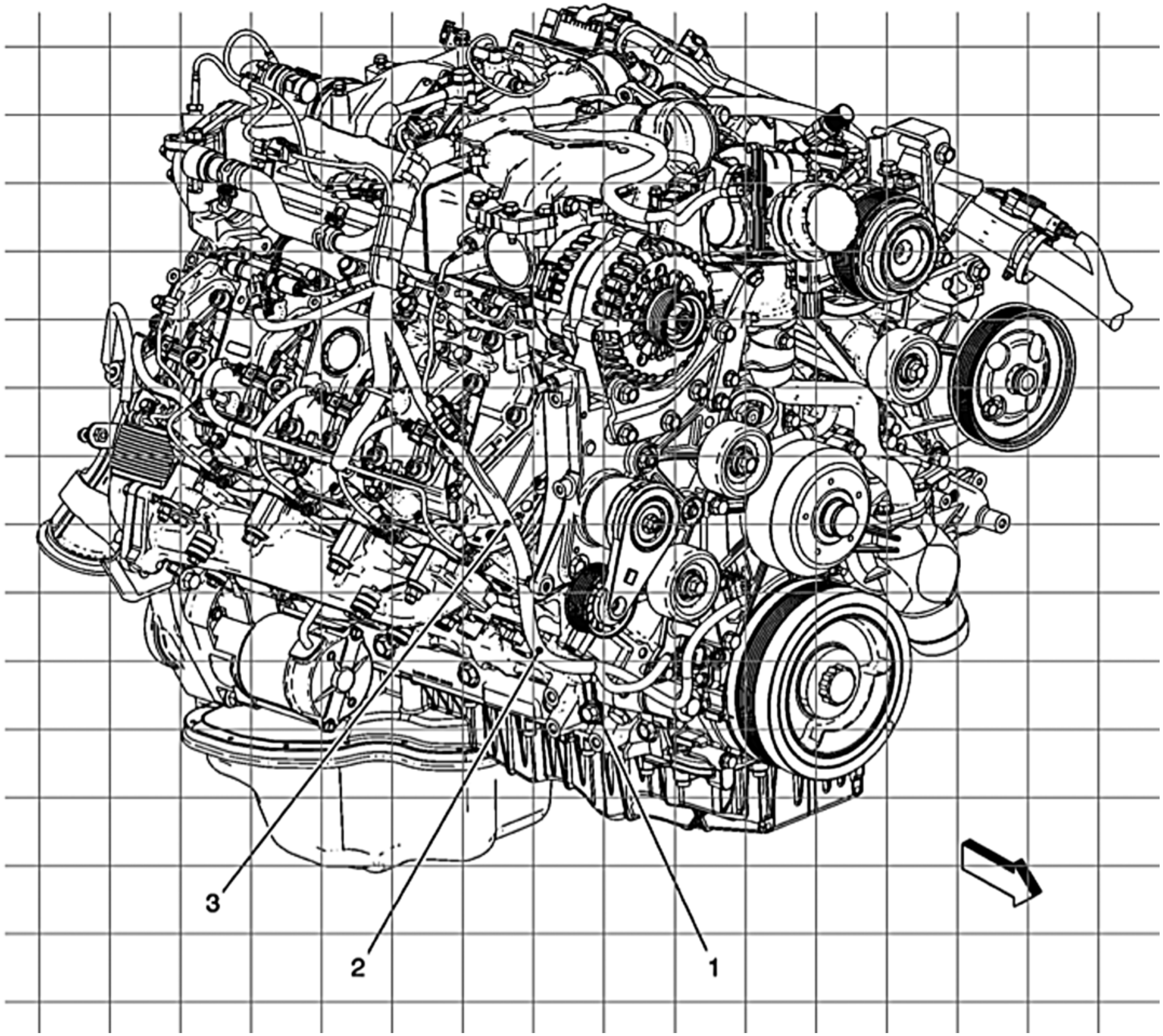


Right Front of Engine Harness Routing (LGH)

(1) G109

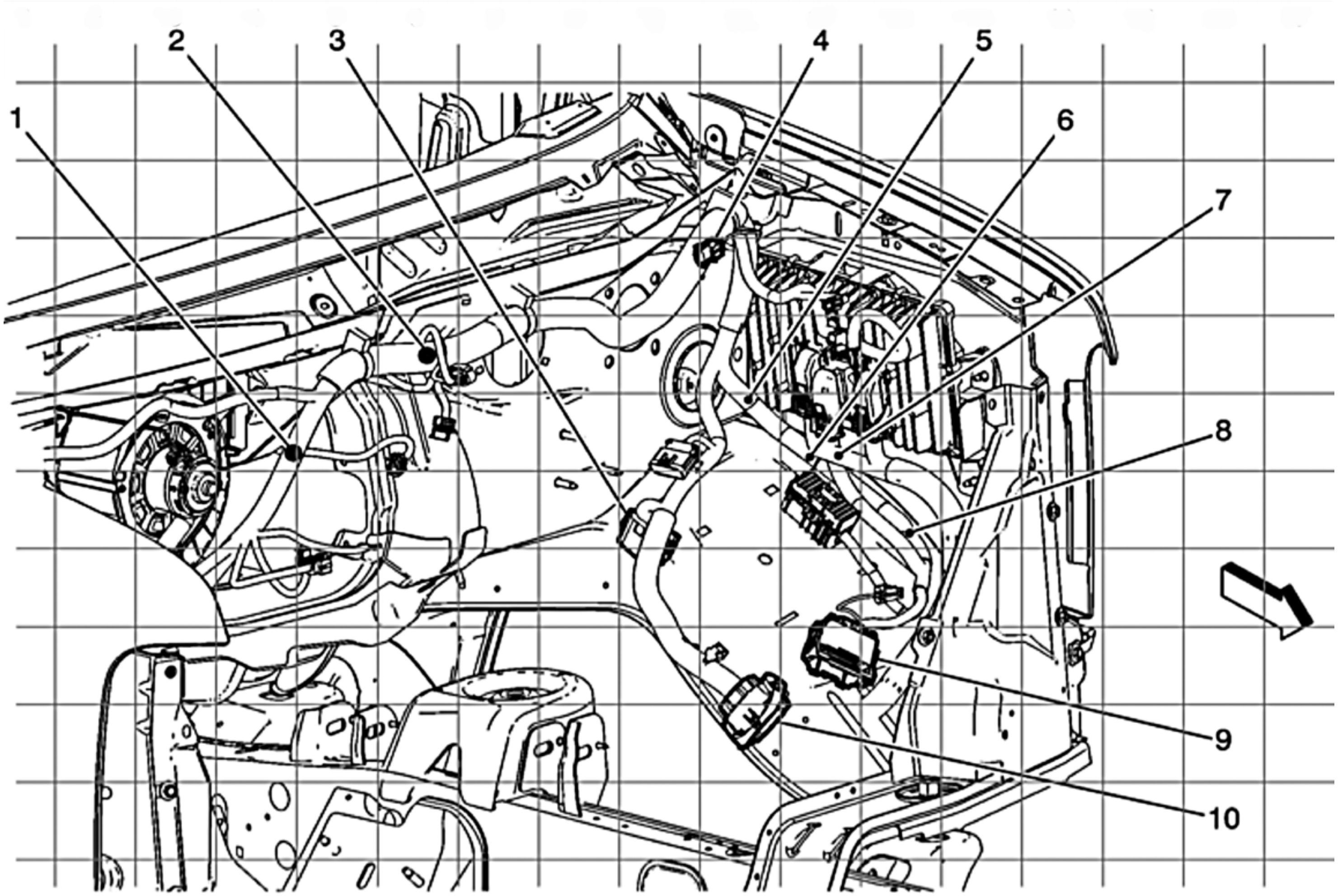
(2) J163

(3) J162

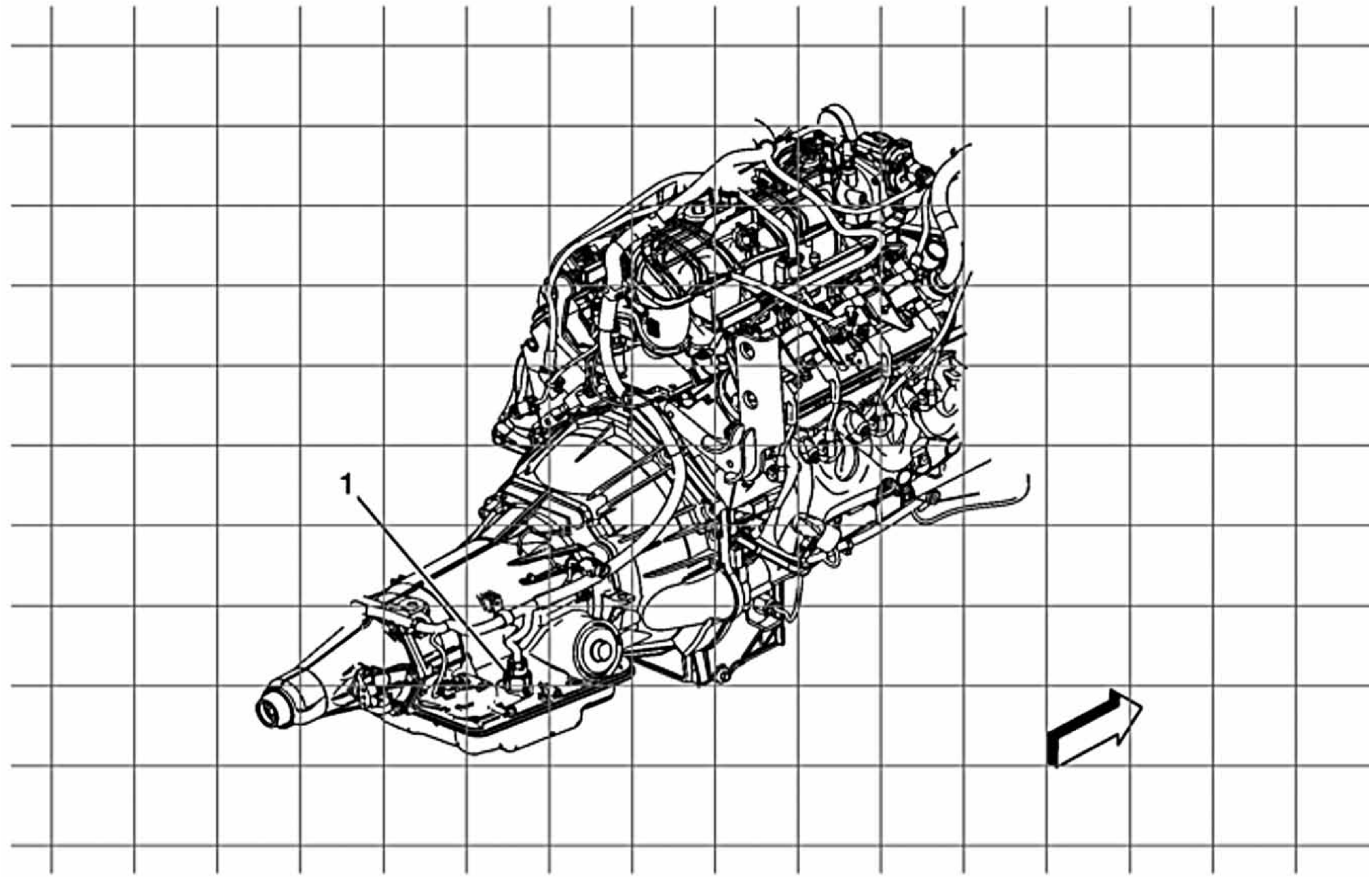


Engine Harness Routing (LGH)

(1) J102
(2) J140
(3) X101
(4) X109
(5) J123
(6) J115
(7) J161
(8) J101
(9) X107
(10) X100



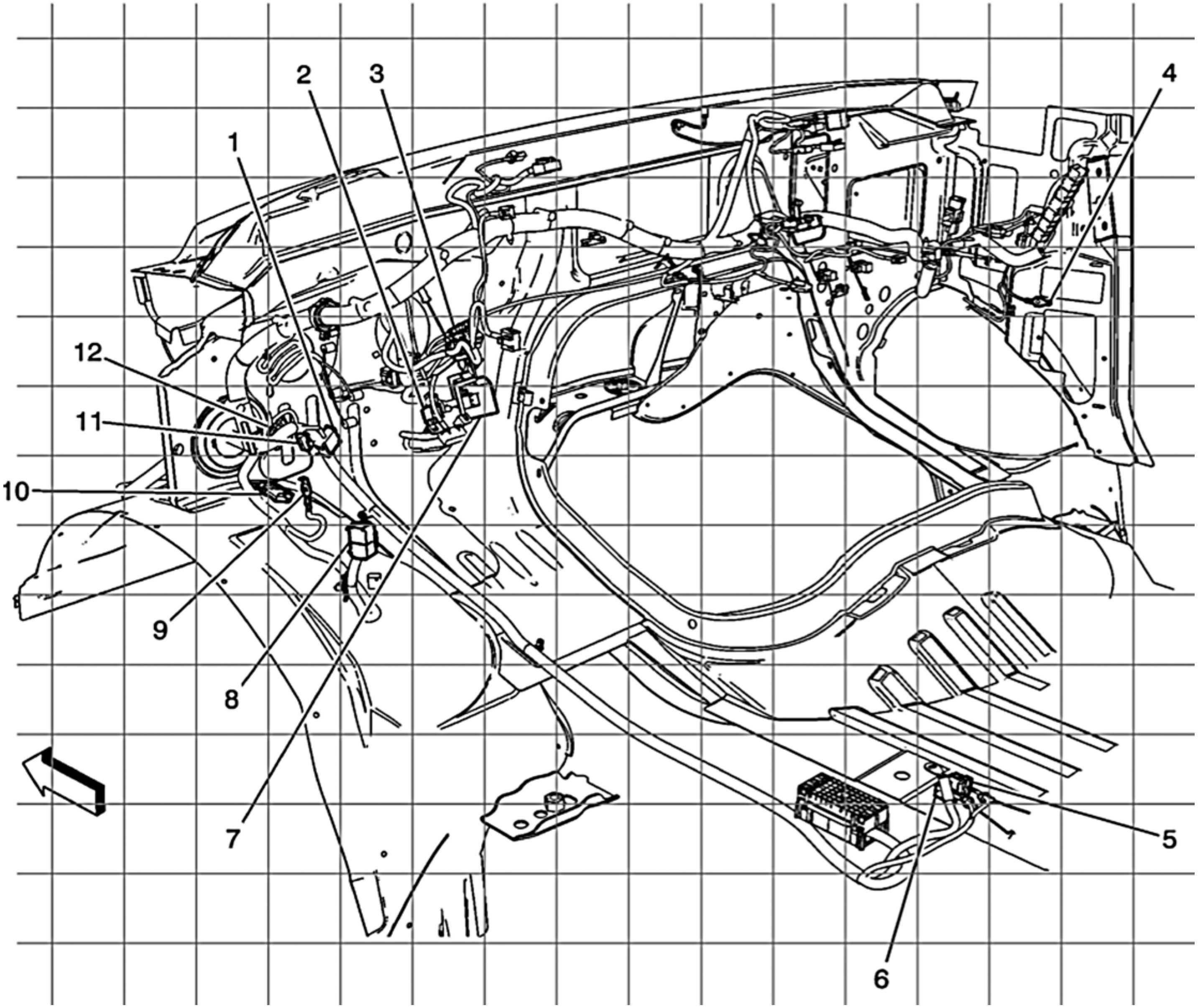
Automatic Transmission Harness Routing (M30)



(1) X175 (M30)

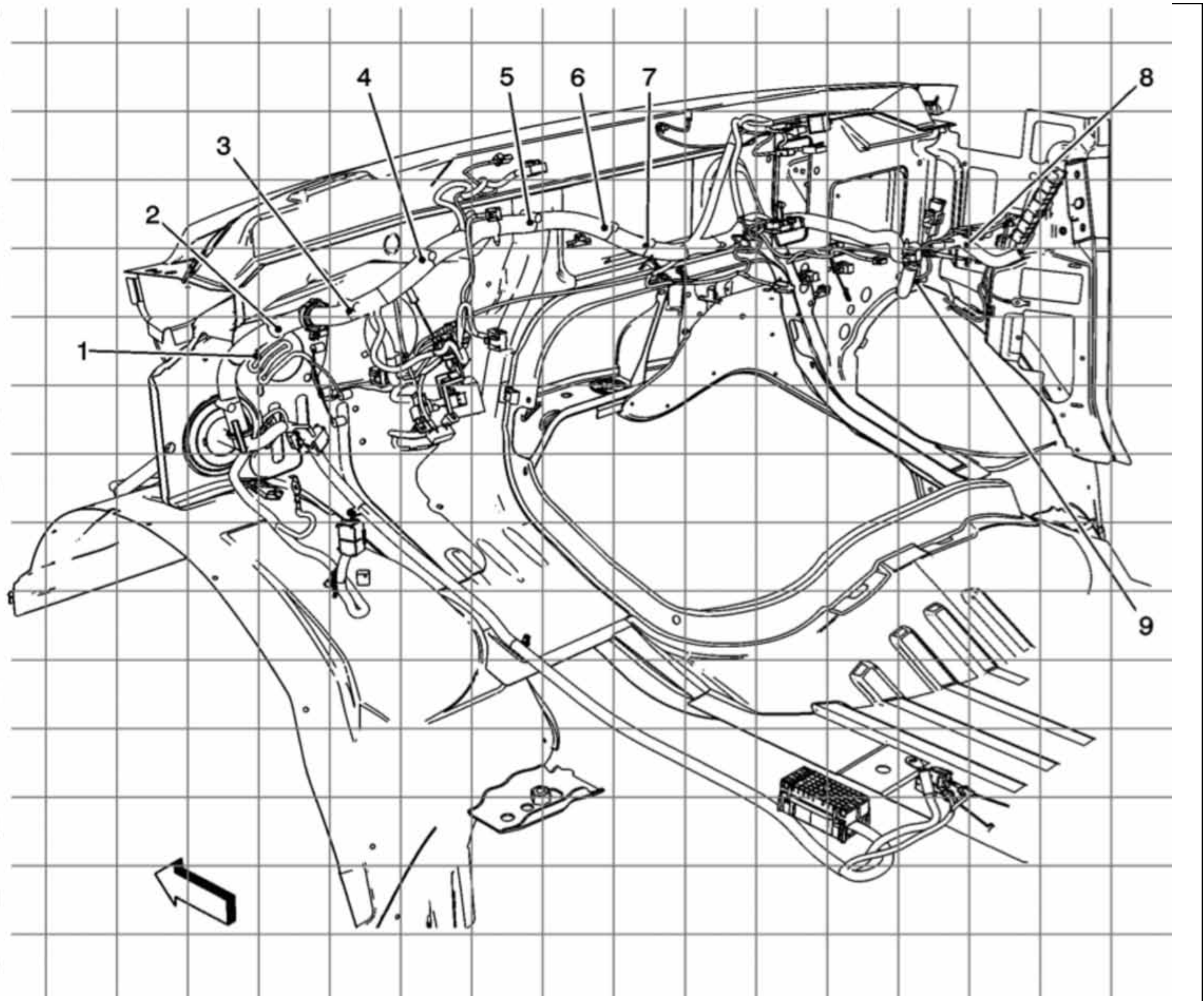
Instrument Panel Harness Routing - Passenger Compartment

(1)	JX250
(2)	X221
(3)	X276
(4)	G304
(5)	X331
(6)	X330
(7)	X200
(8)	X318 (Passenger or Cargo)
(9)	G301 and G302
(10)	X222 (YF2 or YF7)
(11)	X220
(12)	JX200



Instrument Panel Harness Routing - Splices

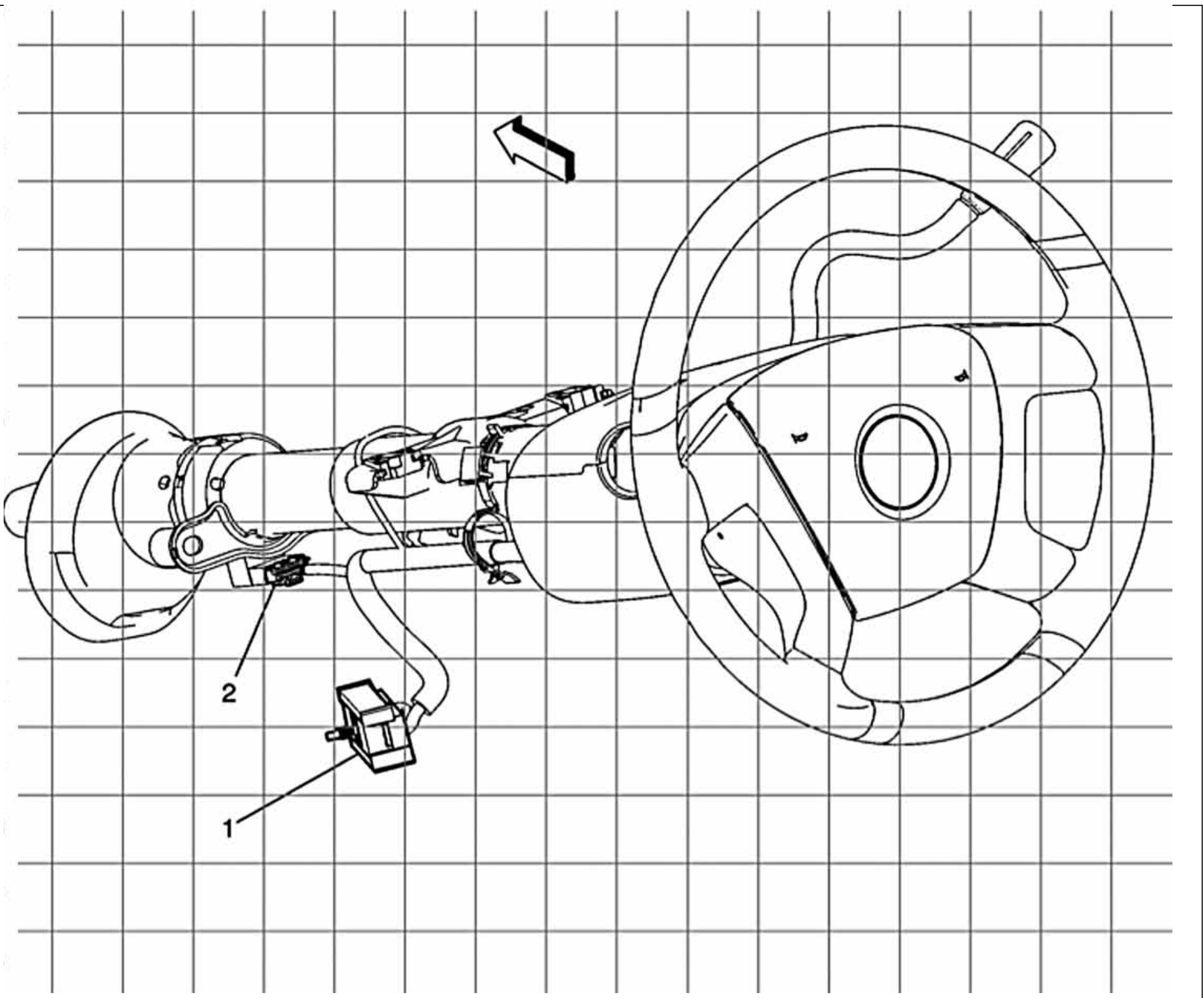
(1) J247
(2) J244
(3) J231
(4) J248
(5) J207
(6) J246 (DE7)
(7) J245 (DE7)
(8) J249
(9) J250



Steering Column Harness Routing

(1) X200

(2) Steering Wheel Speed/Position Sensor (JL4)



Body Harness Routing - Left Front Passenger Compartment

(1) JX347

(2) G347

(3) X500

(4) X319 (C36 with ENC)

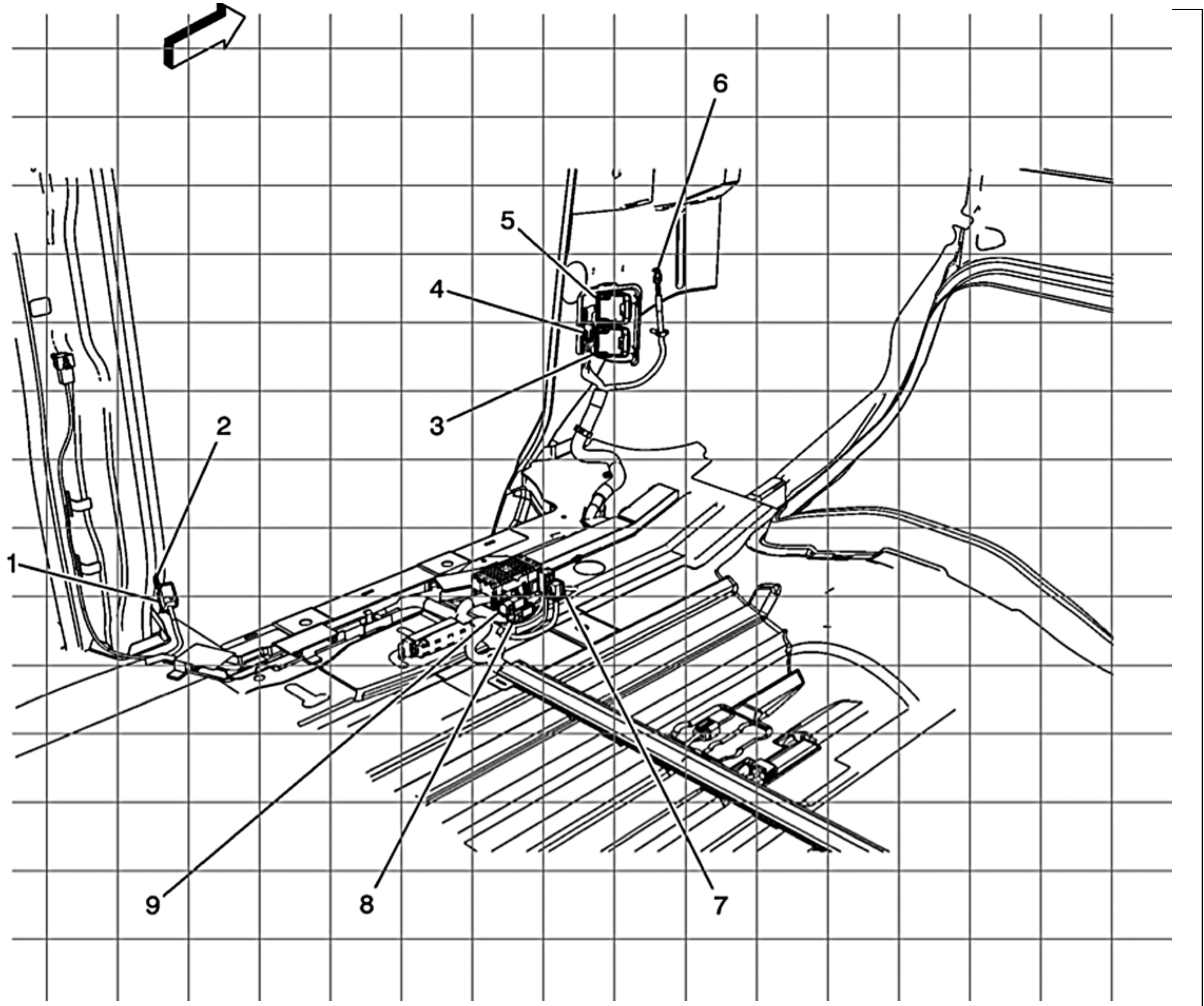
(5) X318 (Passenger or Cargo)

(6) G301 and G302

(7) X307

(8) X330

(9) X331



Body Harness Routing - Right Front Passenger Compartment

(1) X600

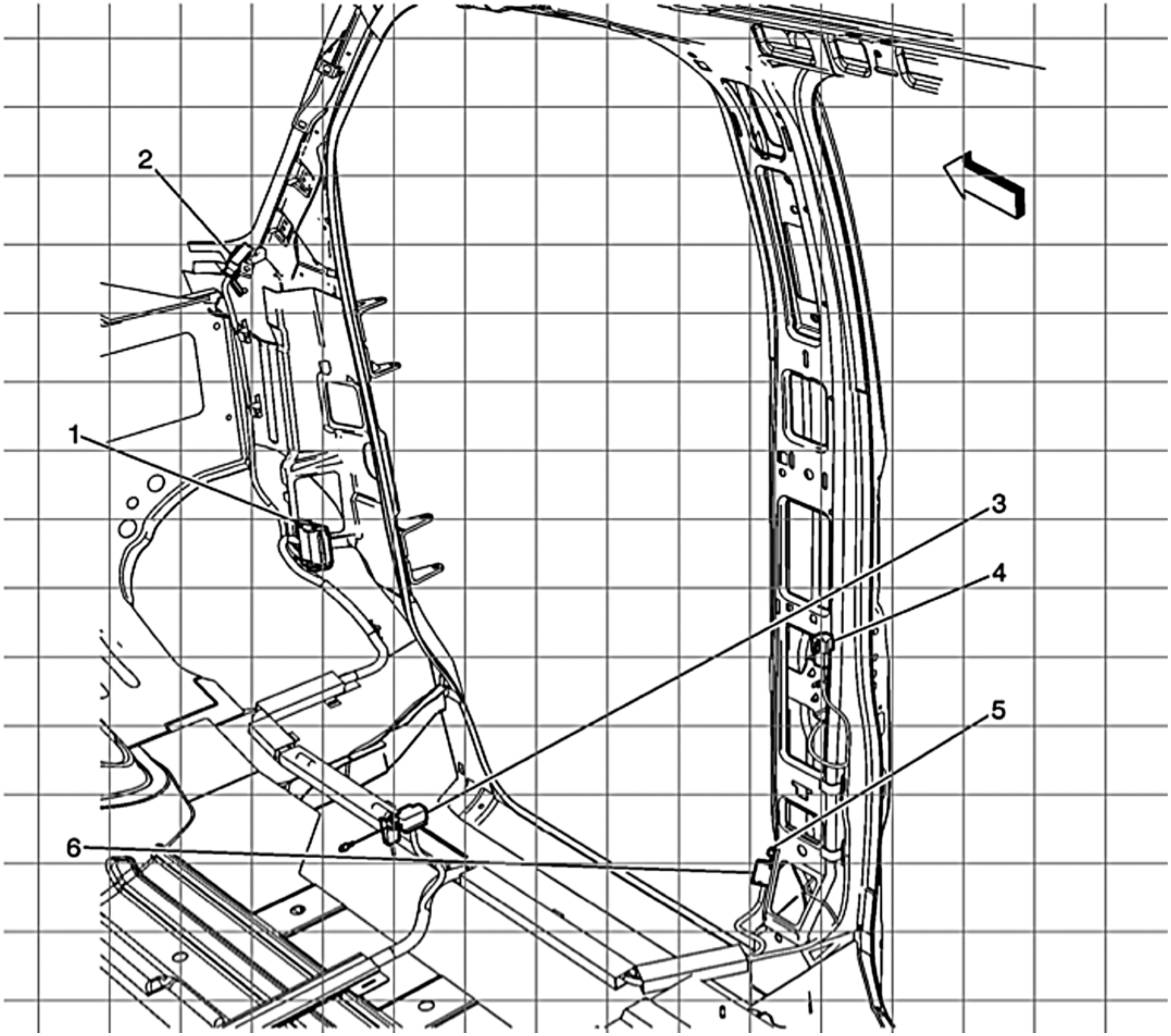
(2) X205

(3) X306

(4) X324 (ASF)

(5) G348

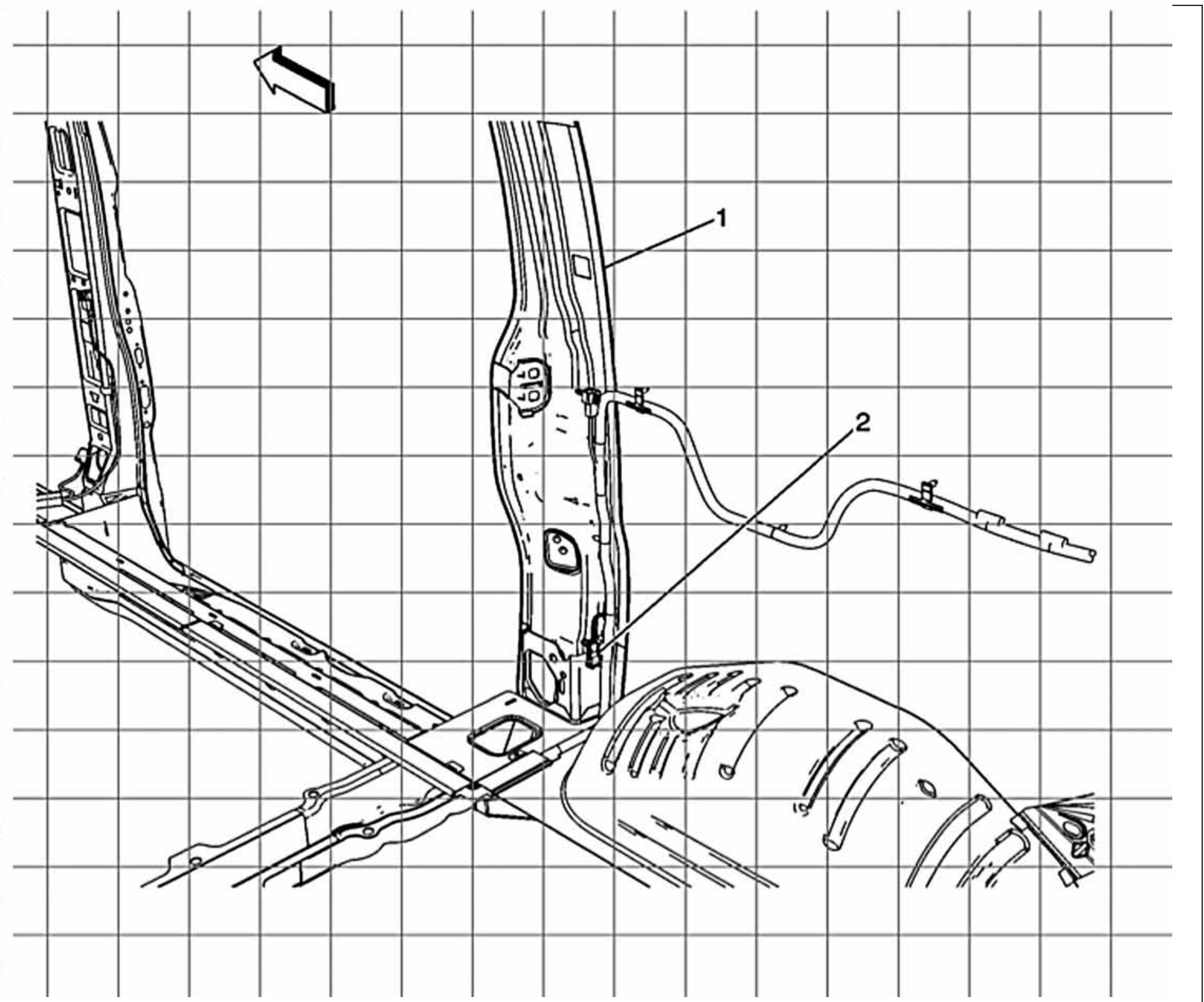
(6) JX348



Body Harness Routing - Right C-Pillar

(1) C-Pillar - Right Side

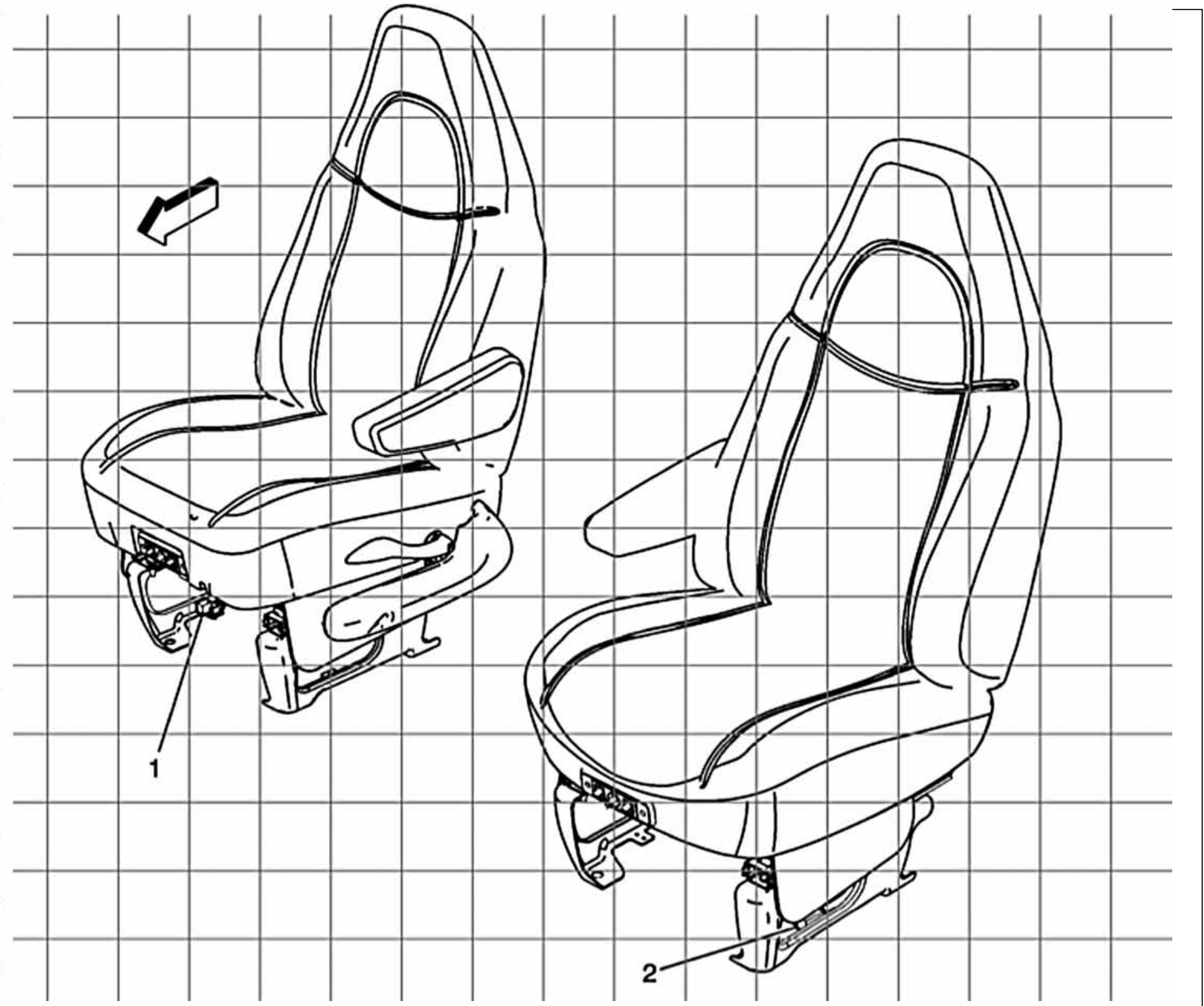
(2) X324 (ASF)



Driver and Front Passenger Seats Harness Routing

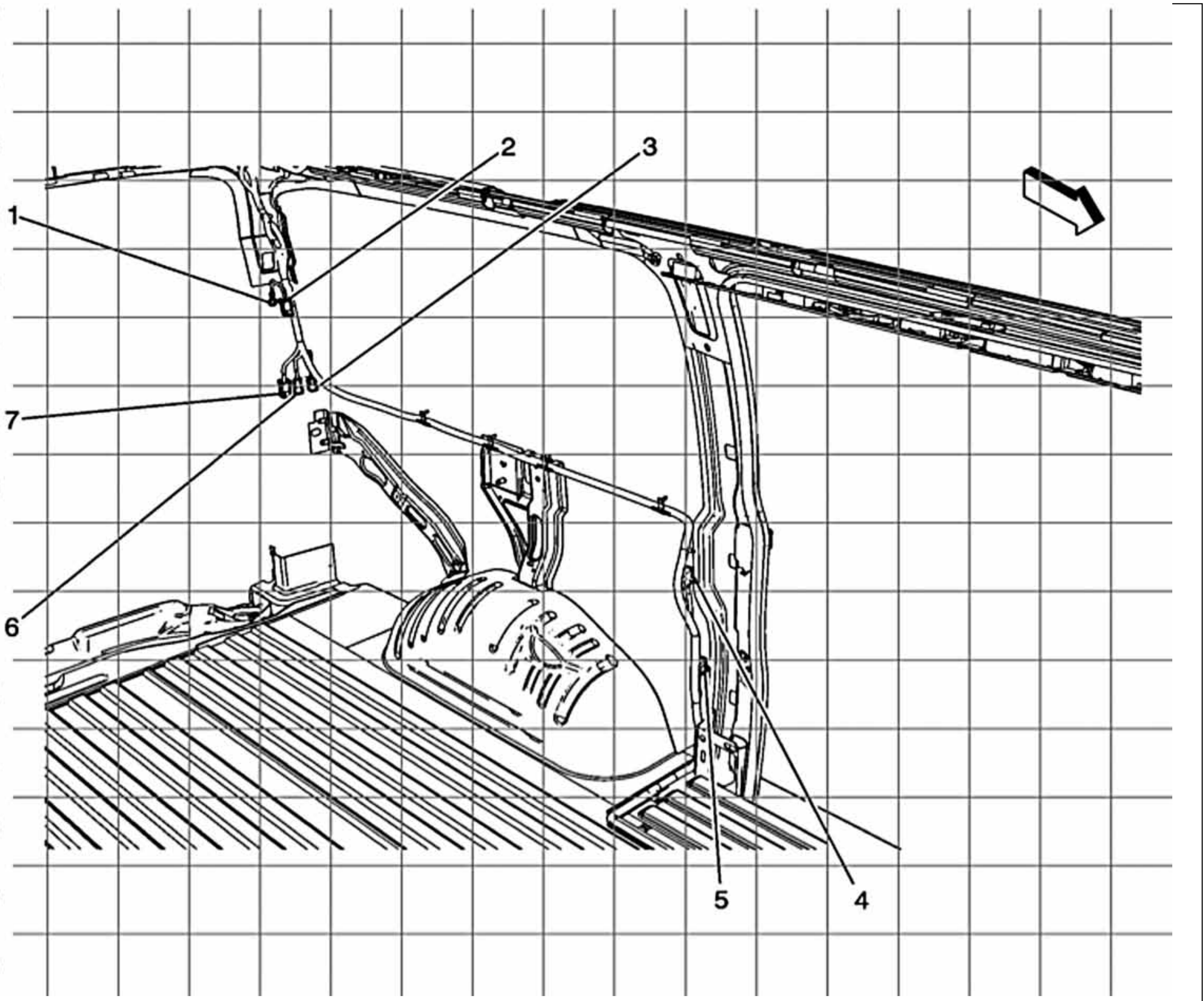
(1) X306

(2) X307



Body Harness Routing - Left Rear (Passenger or Cargo)

- (1) G402
- (2) X401
- (3) X411
- (4) X321 (YF2 or YF7)
- (5) X320 (YF2 or YF7)
- (6) X407 (C36 or C69)
- (7) X409 (C36 or C69)



Body Harness Routing - Right Rear (Passenger or Cargo)

(1) X419

(2) X415

(3) X420

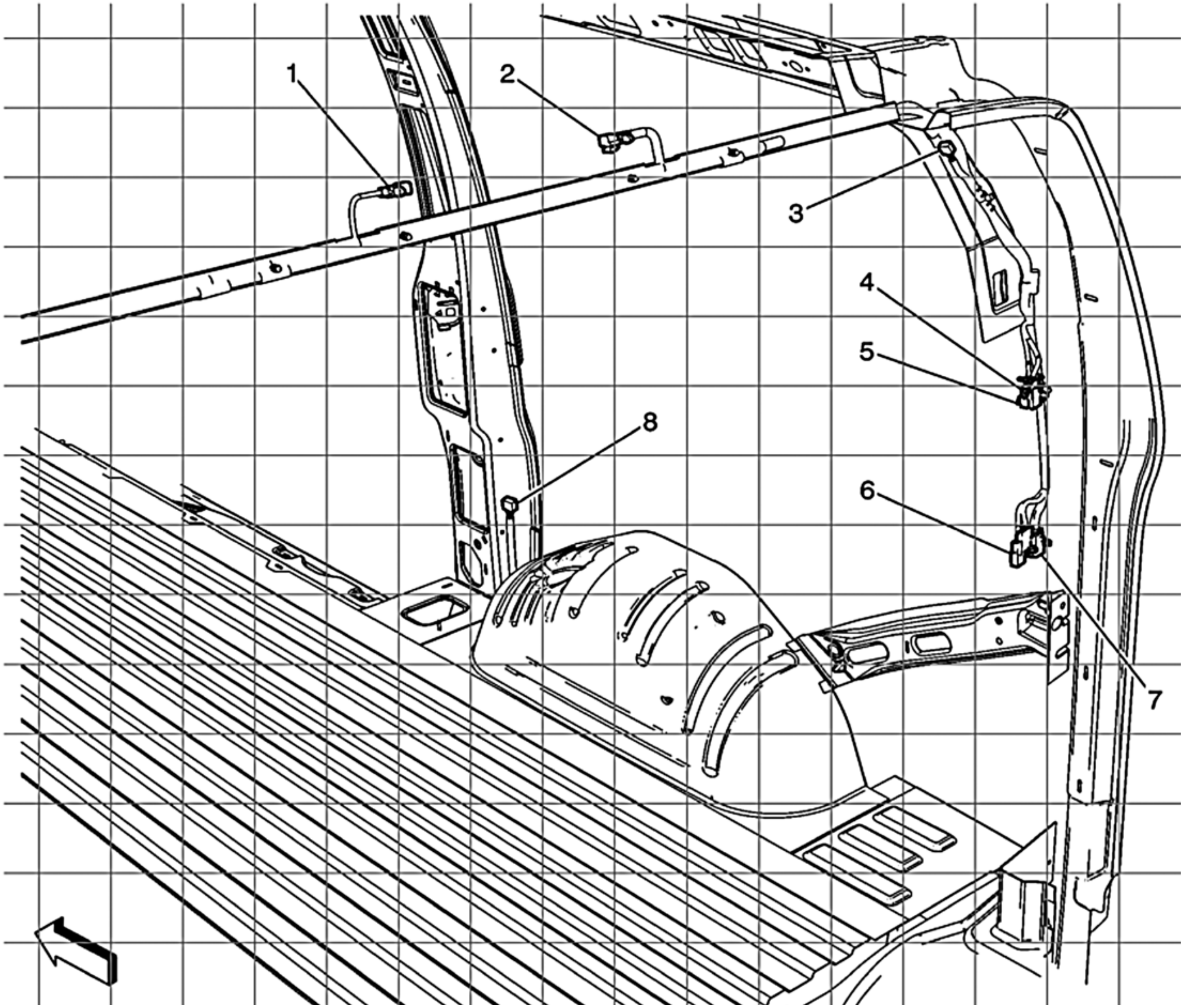
(4) G401

(5) X402

(6) X412

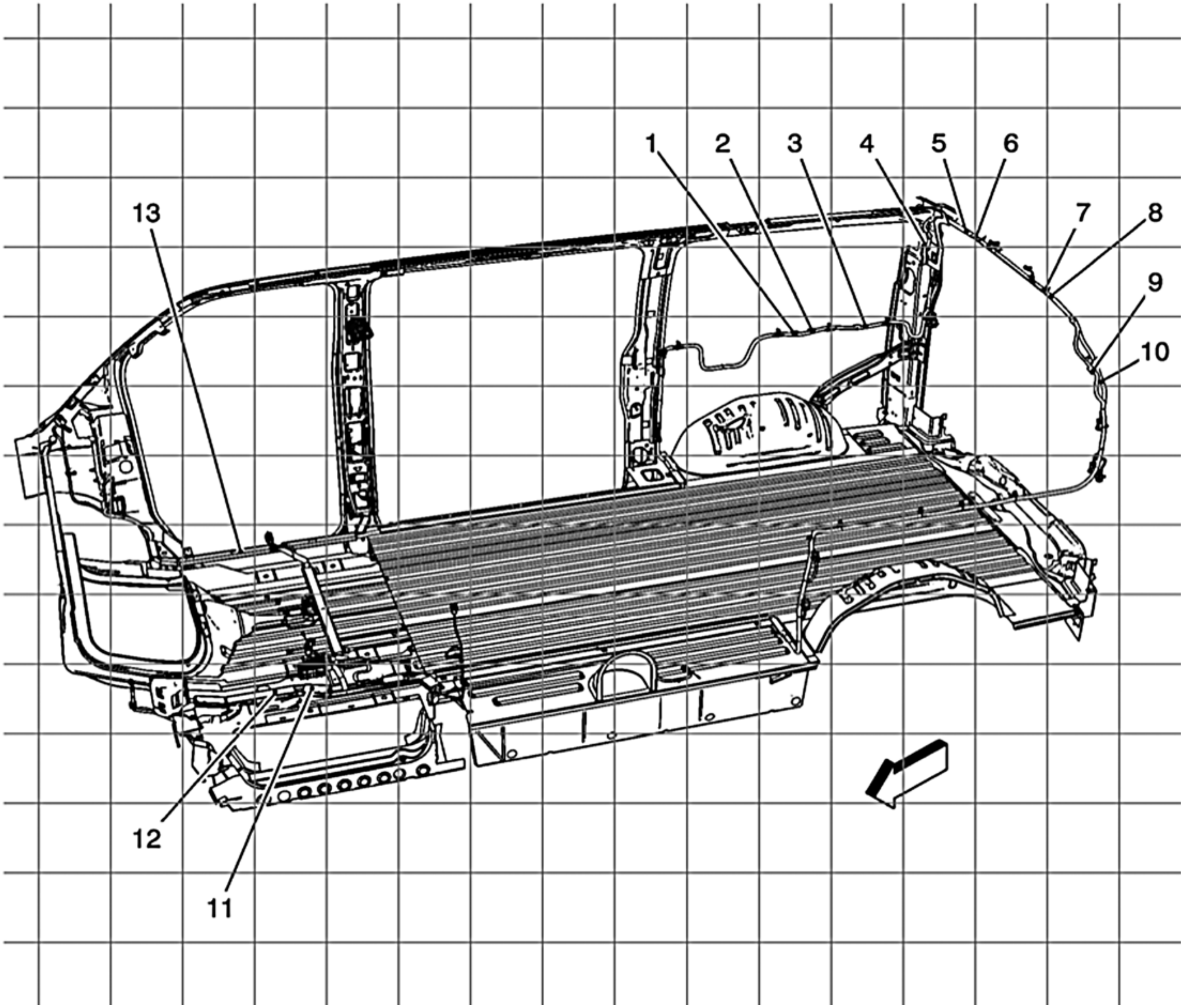
(7) X400

(8) X324



Body Harness Routing - Splices (Passenger or Cargo)

(1) J308 (C69 without YF7)
(2) J310 (C69 without YF7)
(3) J311 (C69 without YF7)
(4) J403
(5) J451
(6) J450
(7) J453
(8) J452
(9) J410
(10) J401 (C36 with C49)
(11) J356 (C69 with AU3)
(12) J318 (ASF)
(13) J331

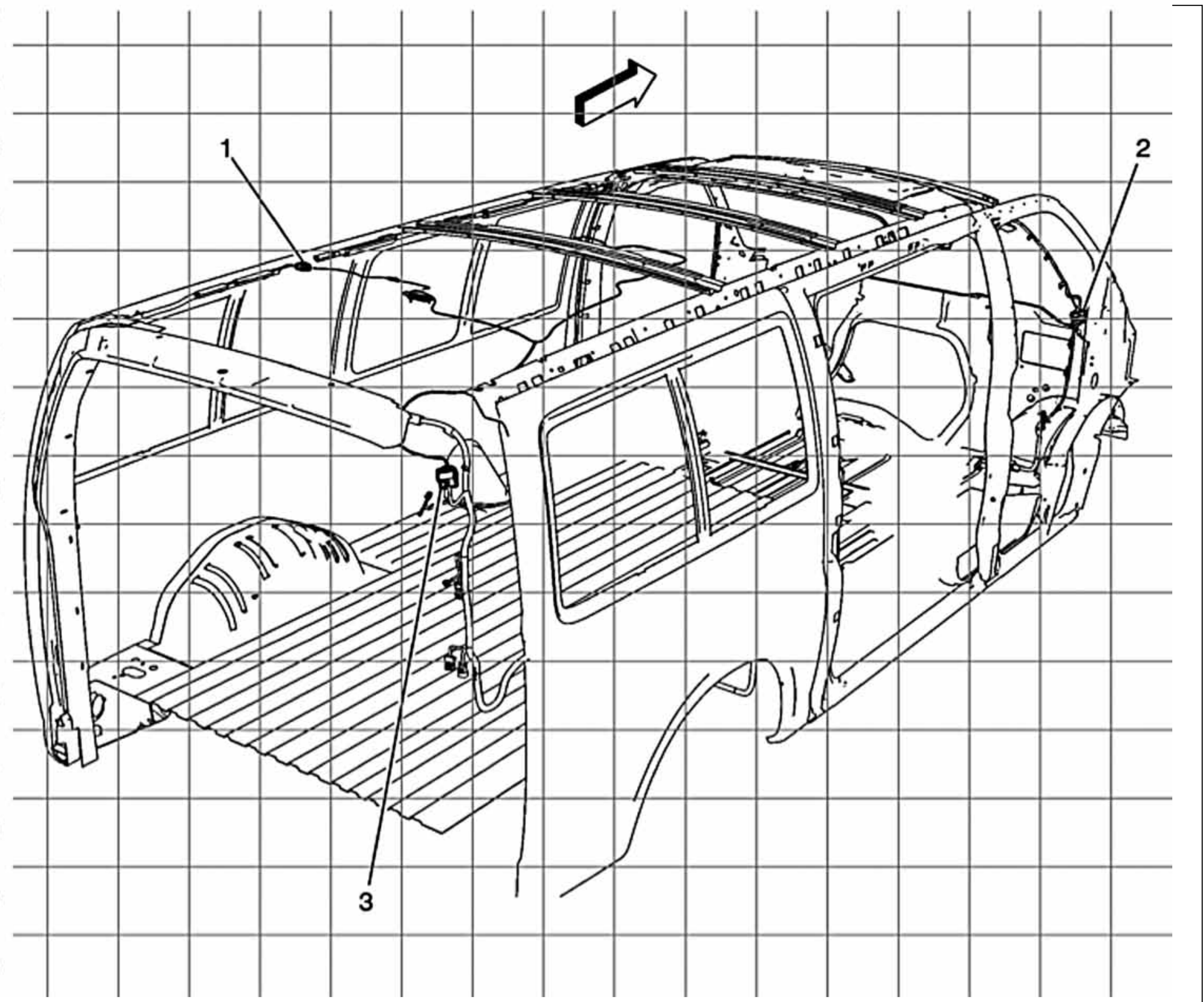


Front and Rear Headliner Harness Routing

(1) X417 (Cargo without YF7)

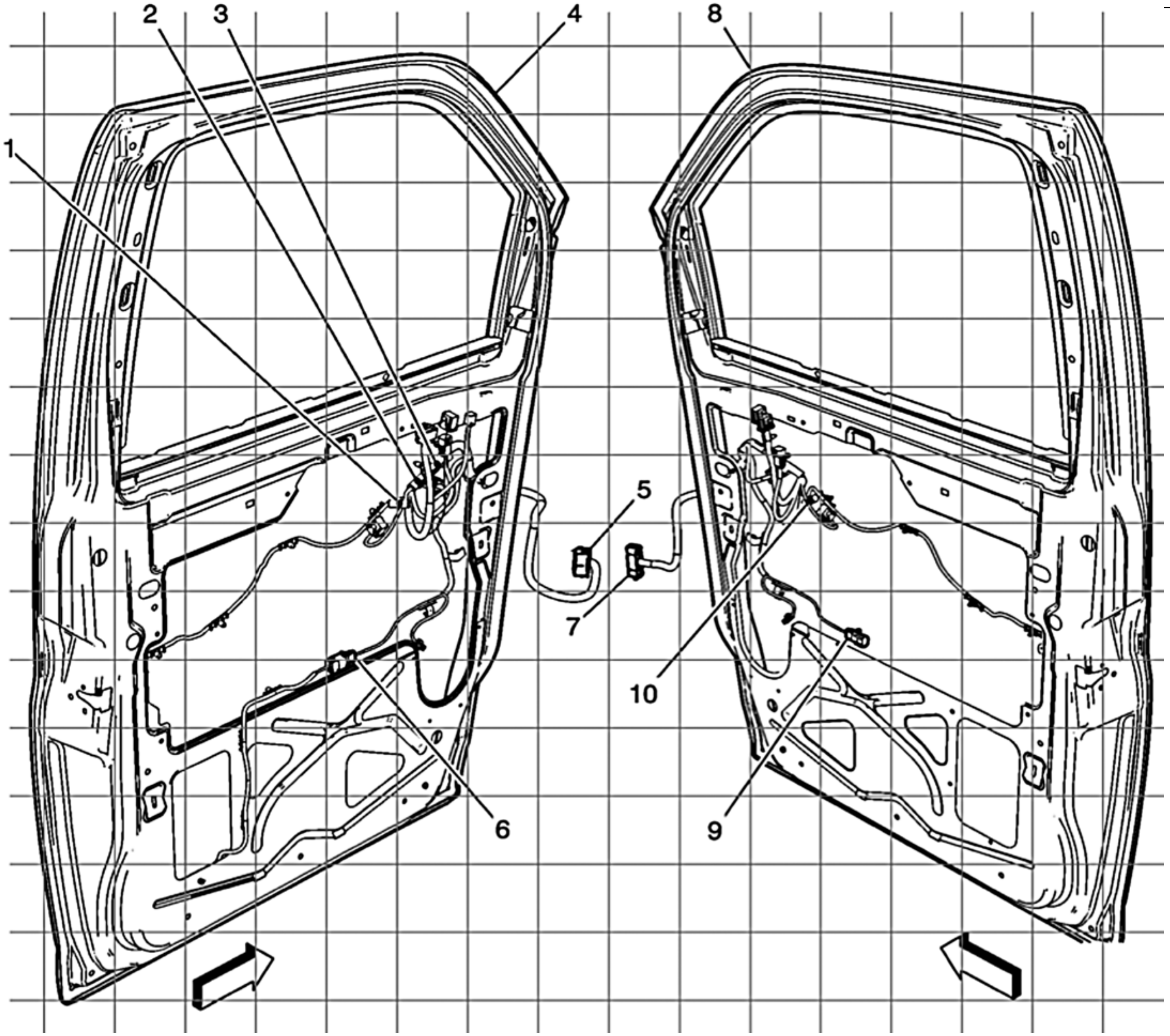
(2) X205

(3) X420 (Passenger)



Driver and Front Passenger Doors Harness Routing

(1) J501 (AU3)
(2) J502 (DE5 or DE7)
(3) J500 (A31, DE5 or DE7)
(4) Driver Door
(5) X500
(6) X501 (ASF)
(7) X600
(8) Passenger Door
(9) X601 (ASF)
(10) J600 (A31, DE5 or DE7)



Rear Cargo Doors Harness Routing (Passenger or Cargo)

(1) J902

(2) X400

(3) X412

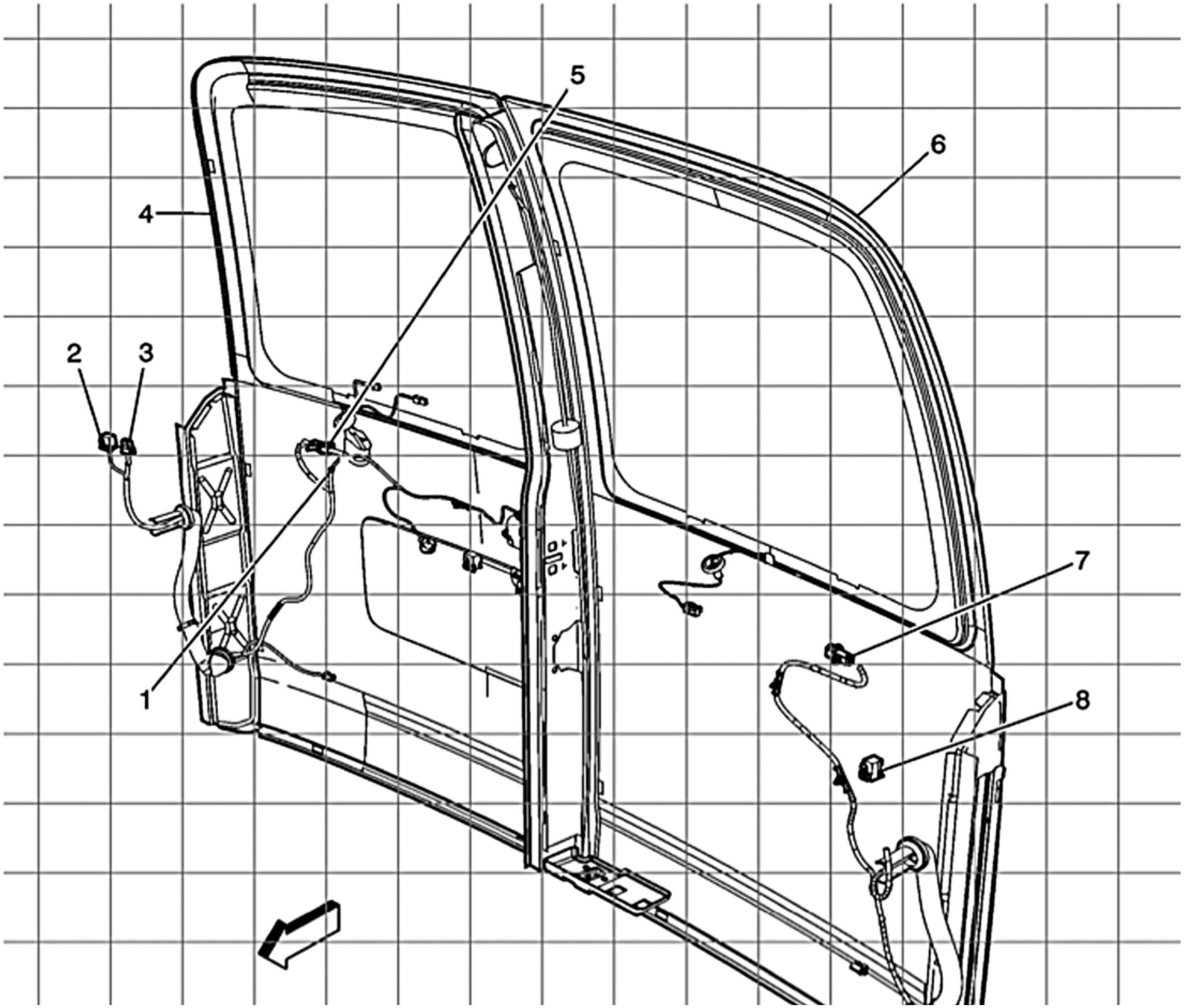
(4) Cargo Door - Right Rear

(5) X902 (C49 with A12)

(6) Cargo Door - Left Rear

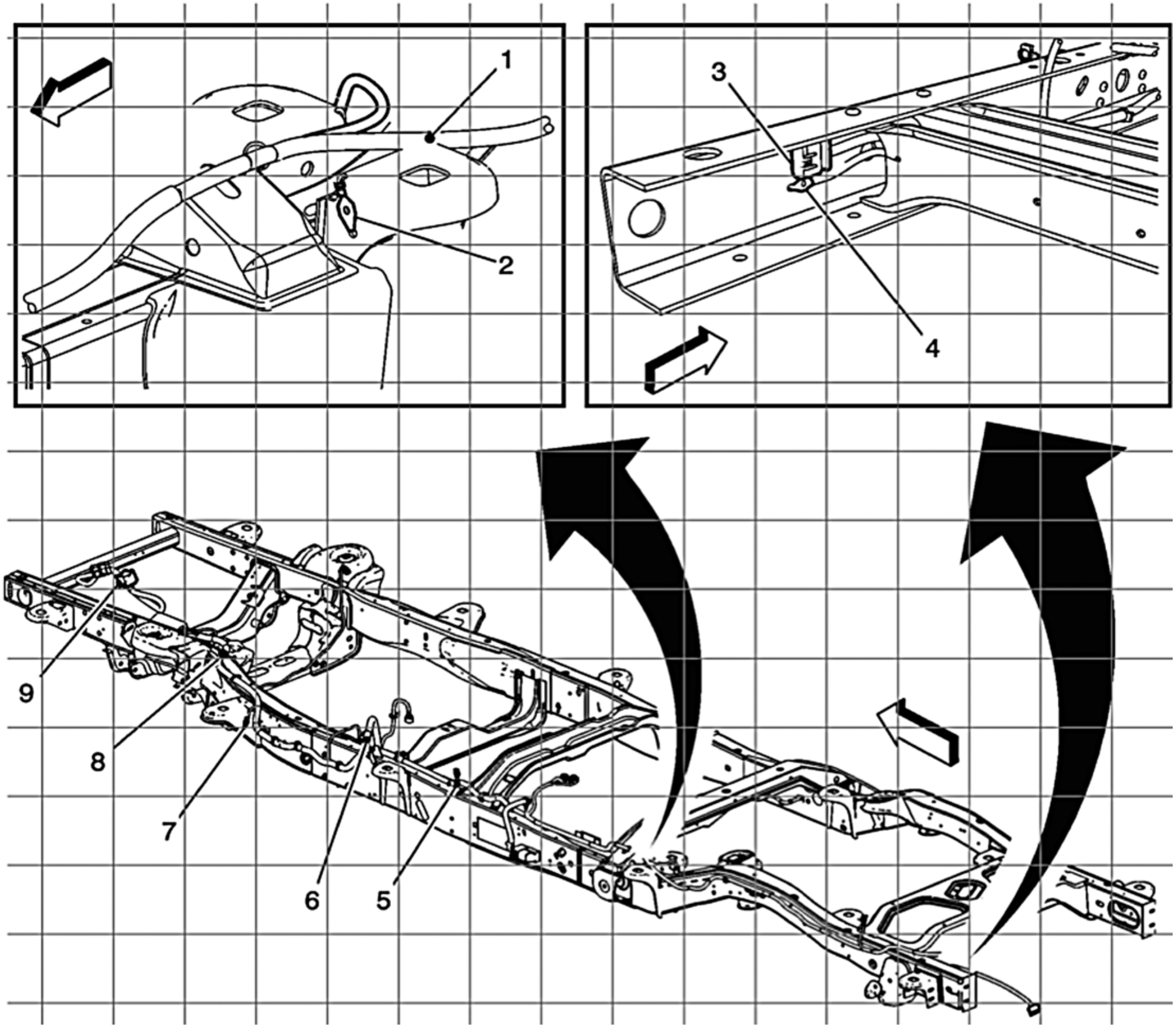
(7) X901 (C49 with A12)

(8) X411



Chassis Harness Routing (LC8, LMF, LU3, L20, or L96)

(1)	J402
(2)	G400 (Passenger or Cargo)
(3)	X405 (Cutaway)
(4)	G400 (Cutaway)
(5)	J301
(6)	J315 (LMF)
(7)	G300
(8)	J315 (LU3, L20 or L96)
(9)	X101



Chassis Harness Routing (LGH)

(1) X101

(2) J404

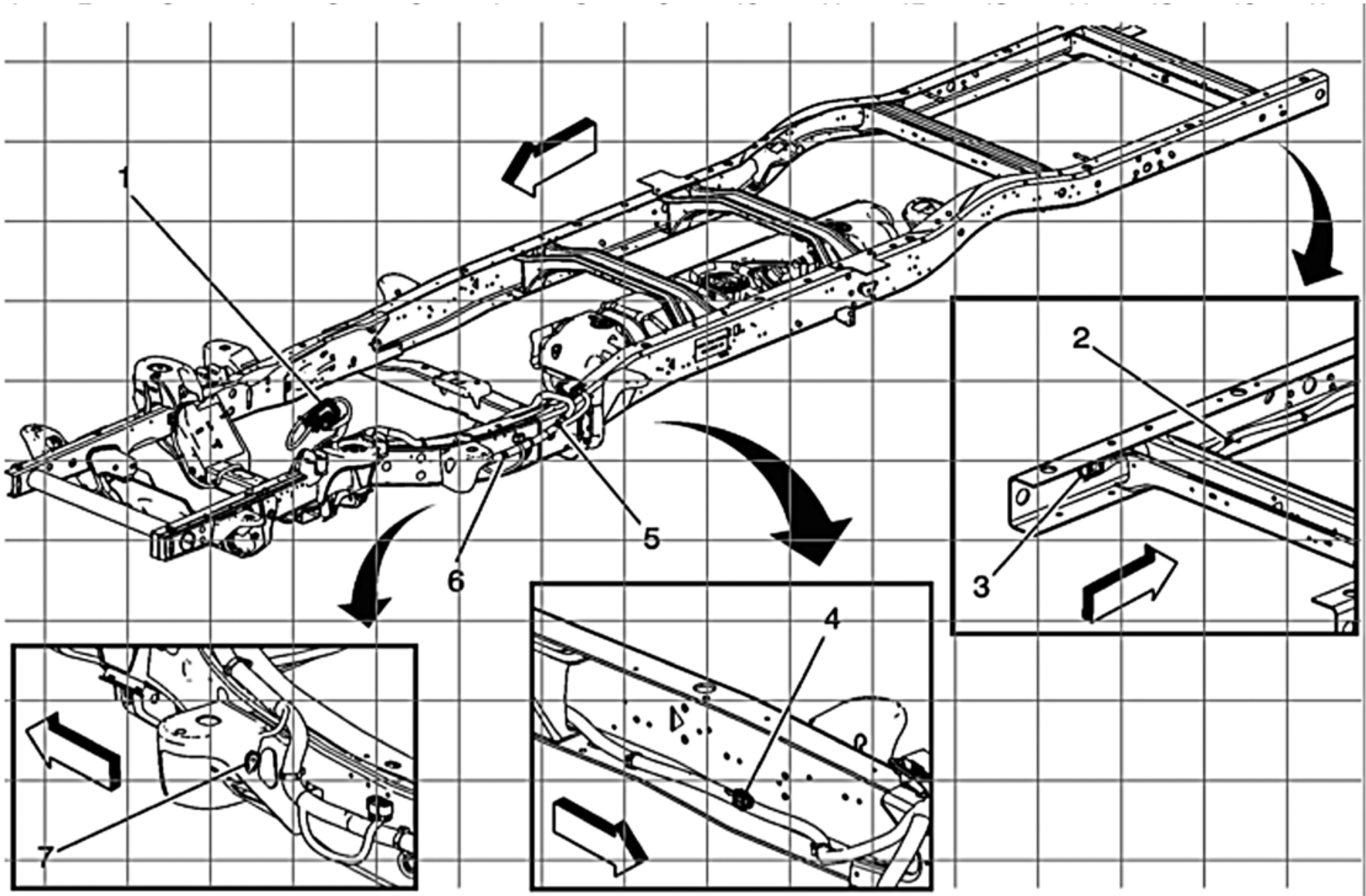
(3) X395

(4) X305

(5) J315

(6) J119

(7) G300

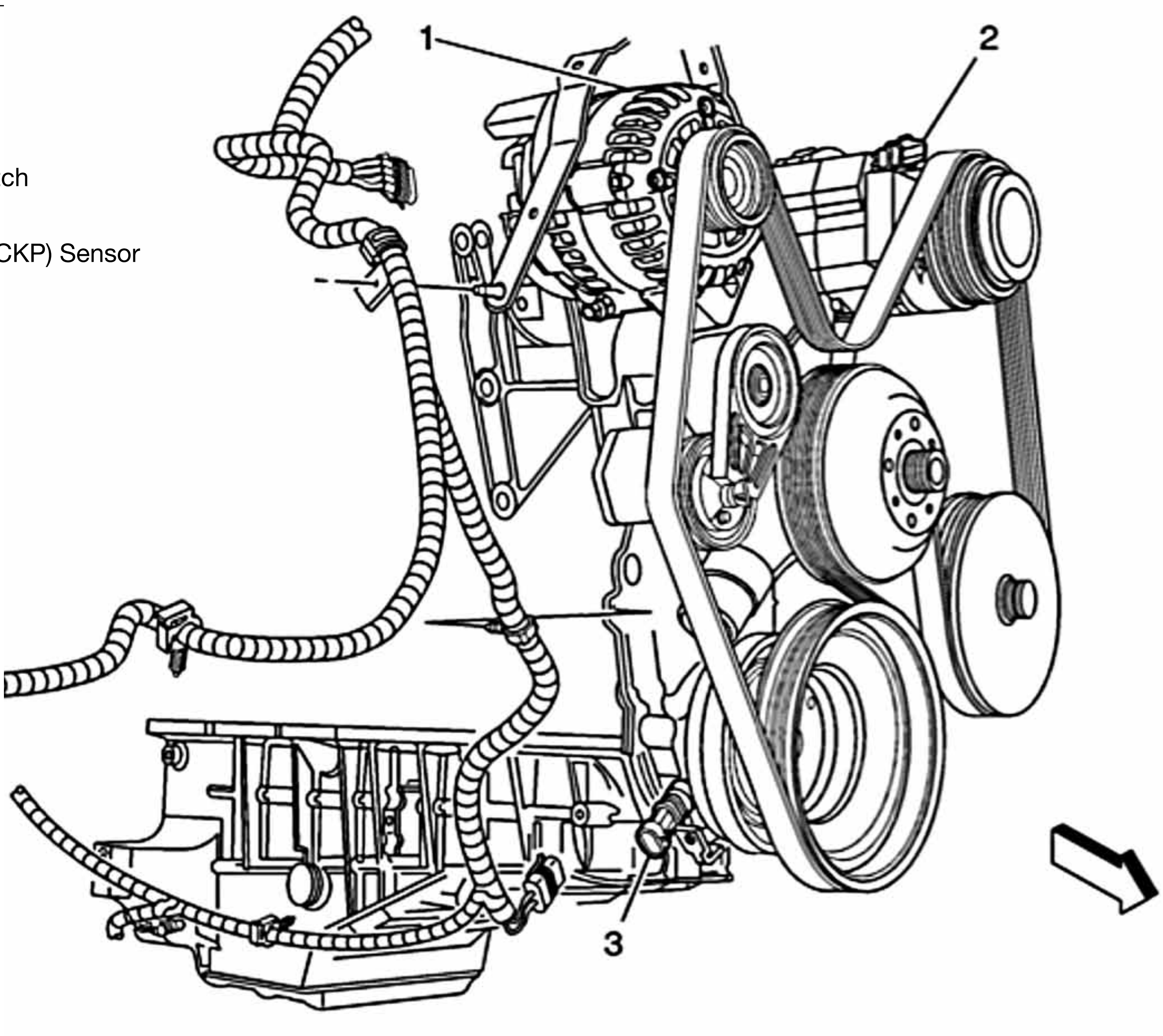


Front of the Engine (LU3)

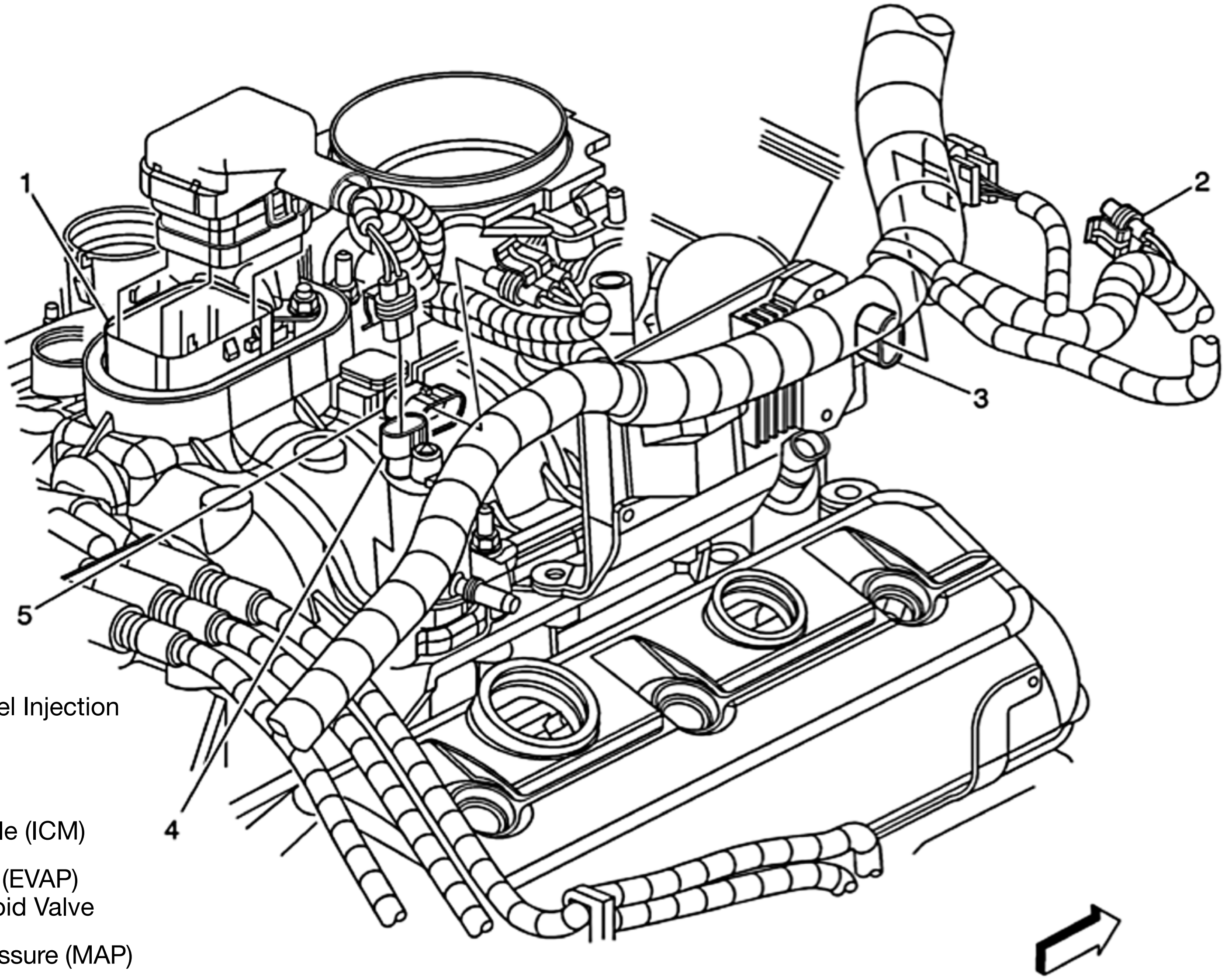
(1) Generator

(2) A/C Compressor Clutch Connector (C60)

(3) Crankshaft Position (CKP) Sensor



Right Side of the Engine (LU3)



(1) Central Sequential Fuel Injection (Central SFI)

(2) Generator Connector

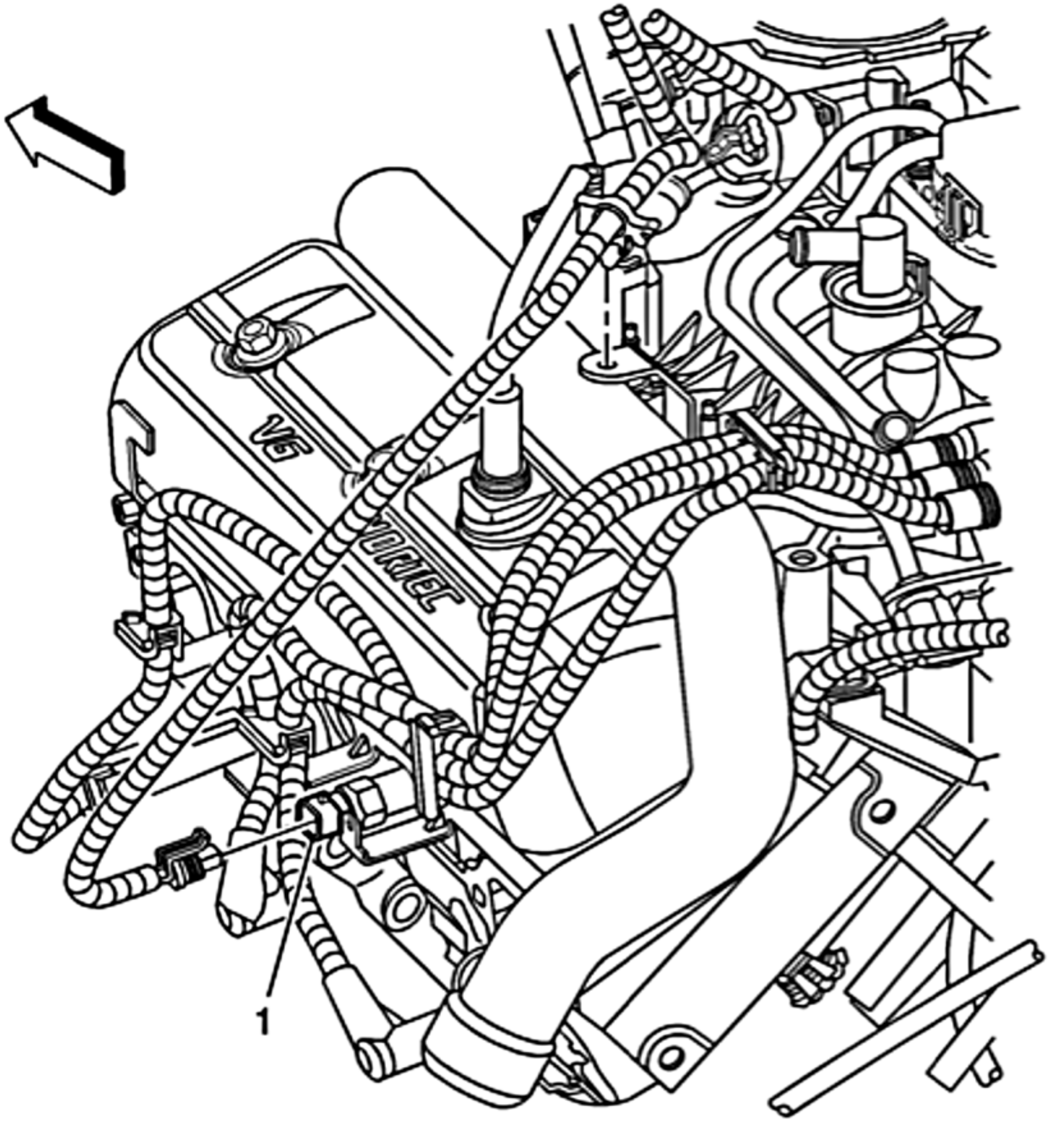
(3) Ignition Control Module (ICM)

(4) Evaporative Emission (EVAP) Canister Purge Solenoid Valve

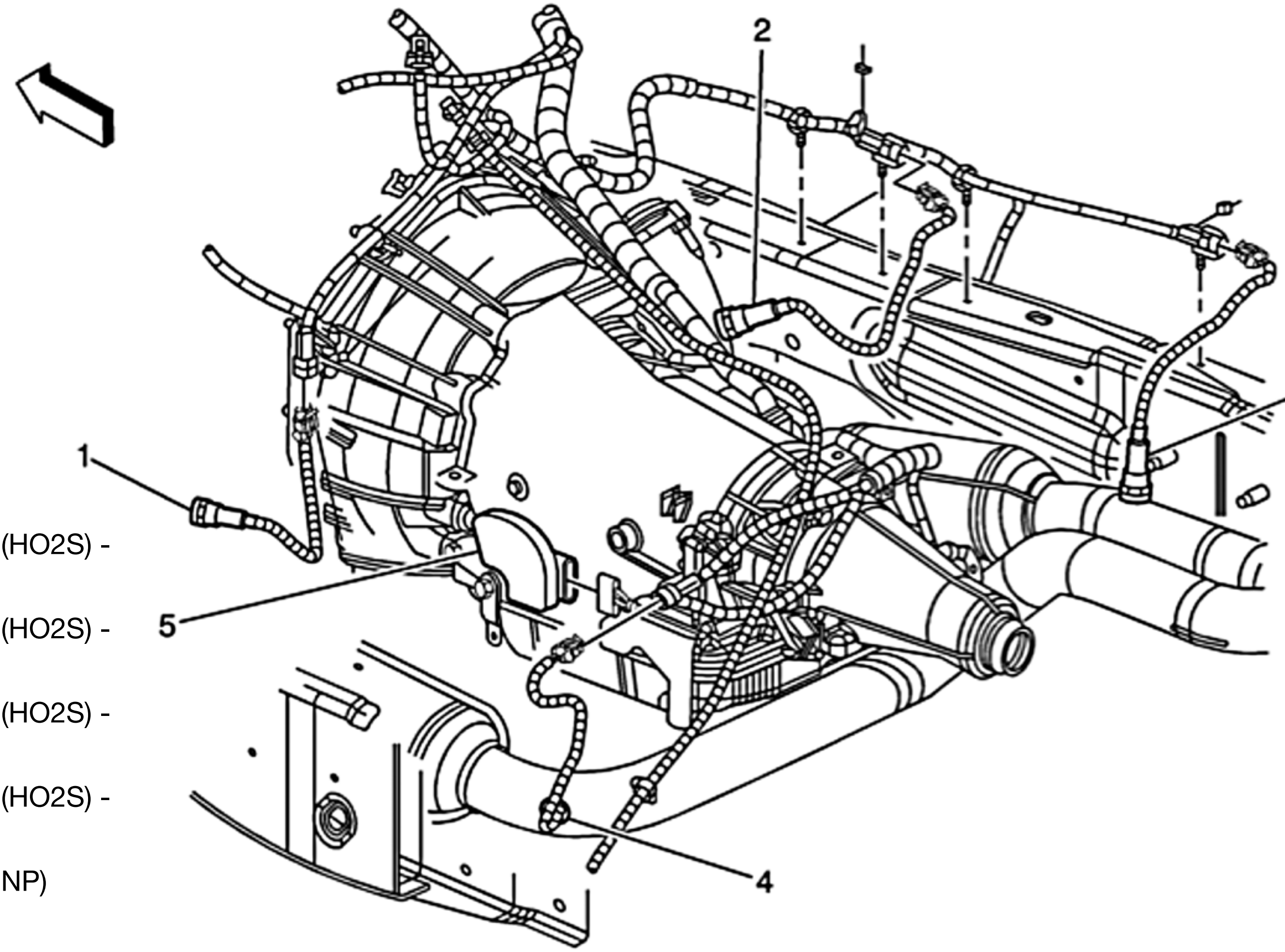
(5) Manifold Absolute Pressure (MAP) Sensor

Left Rear of the Engine (LU3)

(1) Engine Coolant Temperature (ECT) Sensor



Rear of the Engine (LU3 or LMF)



(1) Heated Oxygen Sensor (HO2S) - Bank 1 Sensor 1

(2) Heated Oxygen Sensor (HO2S) - Bank 2 Sensor 1

(3) Heated Oxygen Sensor (HO2S) - Bank 2 Sensor 2

(4) Heated Oxygen Sensor (HO2S) - Bank 1 Sensor 2

(5) Park/Neutral Position (PNP) Switch

Oxygen Sensors (LC8, L20, or L96)

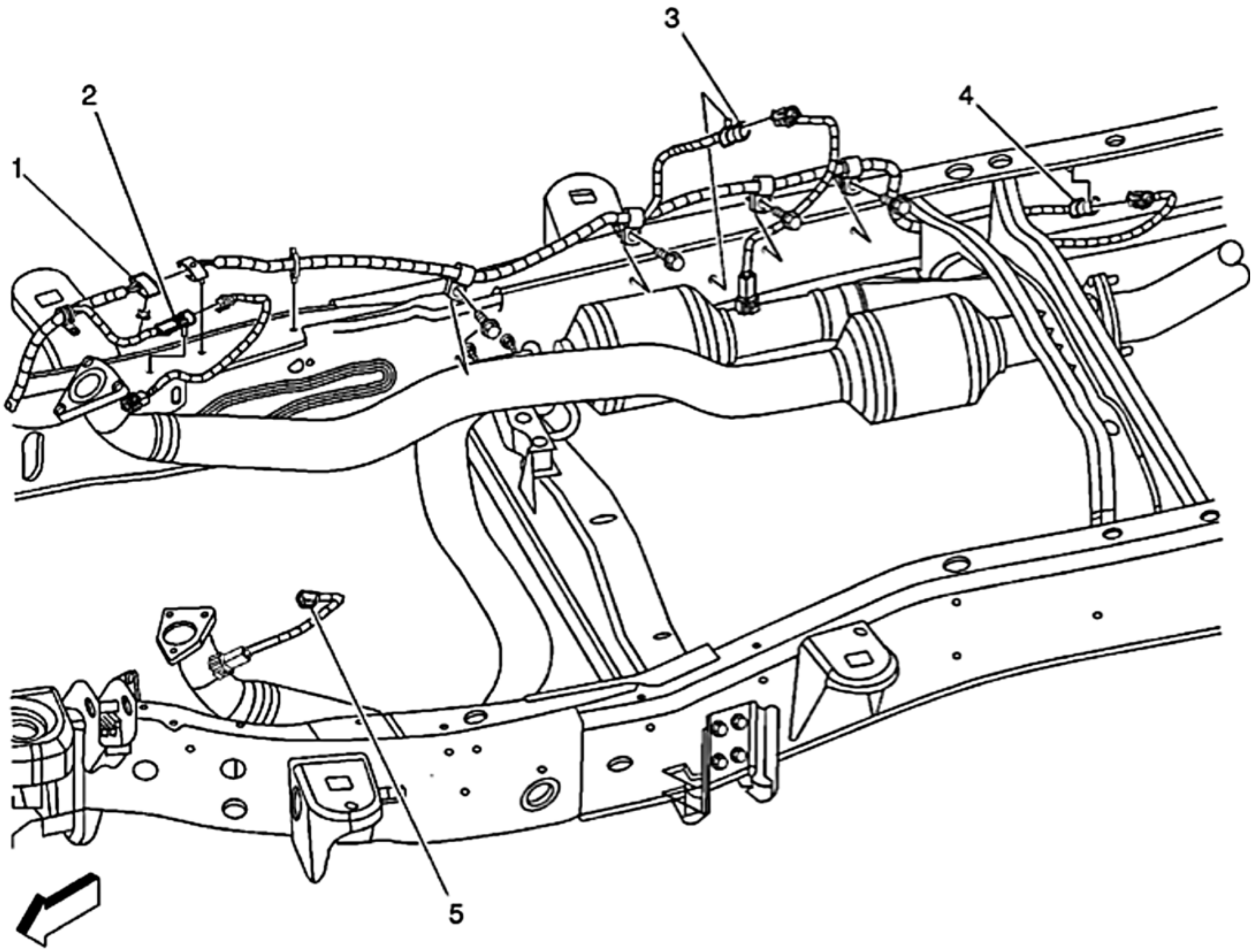
(1) X128 (Cutaway)

(2) Heated Oxygen Sensor (HO2S) - Bank 2 Sensor 1 Connector

(3) Heated Oxygen Sensor (HO2S) - Bank 1 Sensor 2 Connector

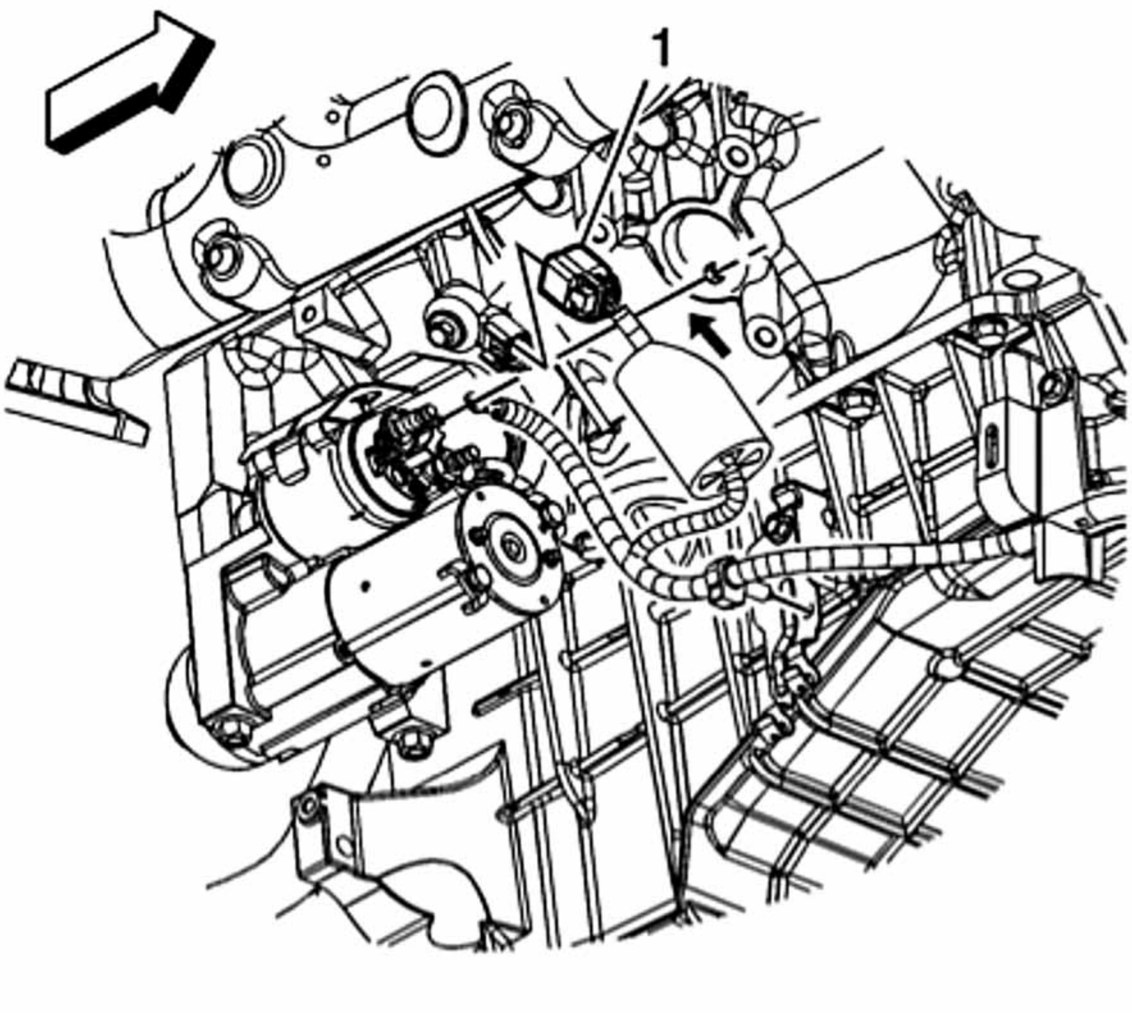
(4) Heated Oxygen Sensor (HO2S) - Bank 2 Sensor 2 Connector

(5) Heated Oxygen Sensor (HO2S) - Bank 1 Sensor 1 Connector



Lower Right of Engine (LU3)

(1) Knock Sensor (KS) 2



Engine Components (LGH)

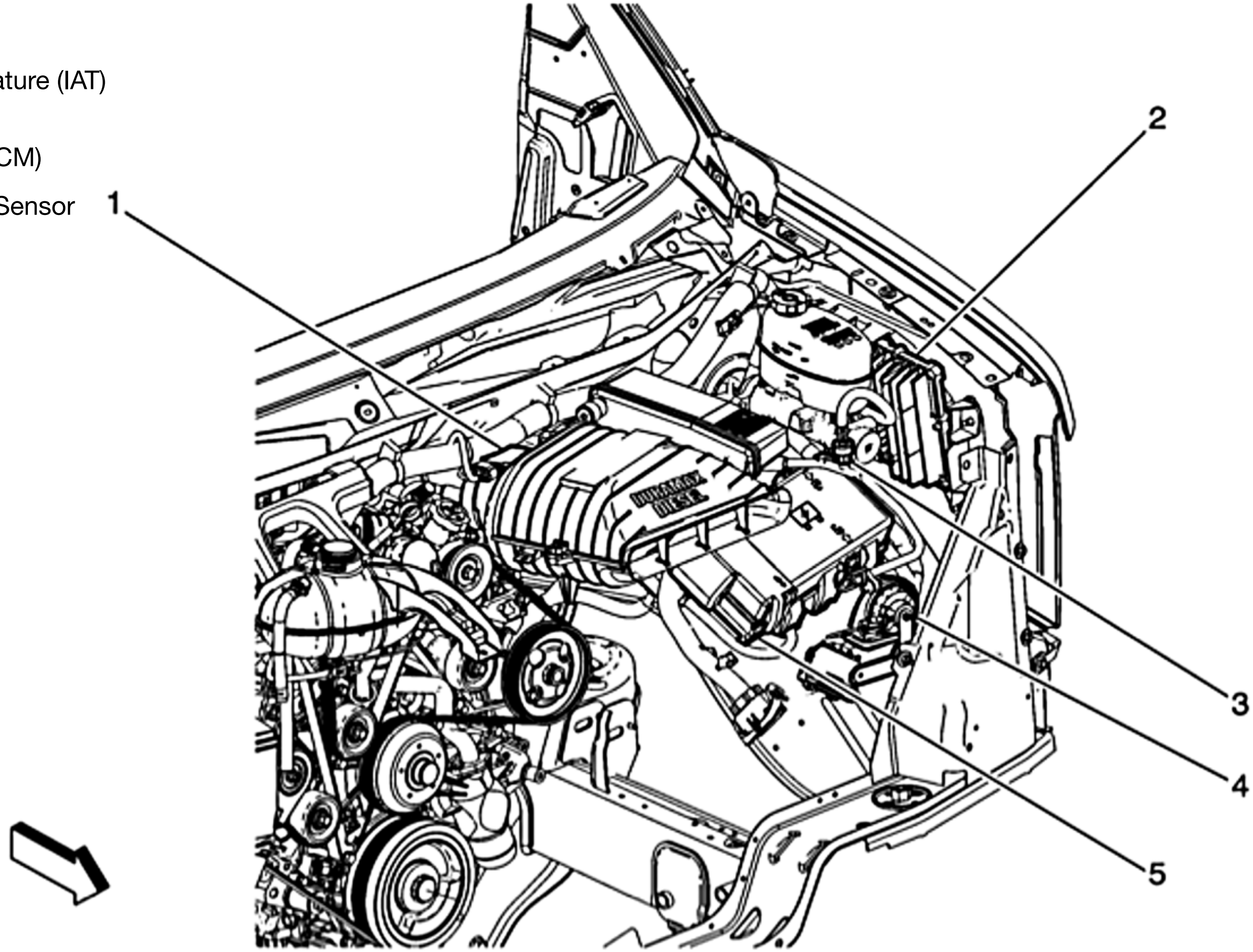
(1) Mass Air Flow (MAF) Sensor/Intake Air Temperature (IAT) Sensor

(2) Engine Control Module (ECM)

(3) A/C Refrigerant Pressure Sensor

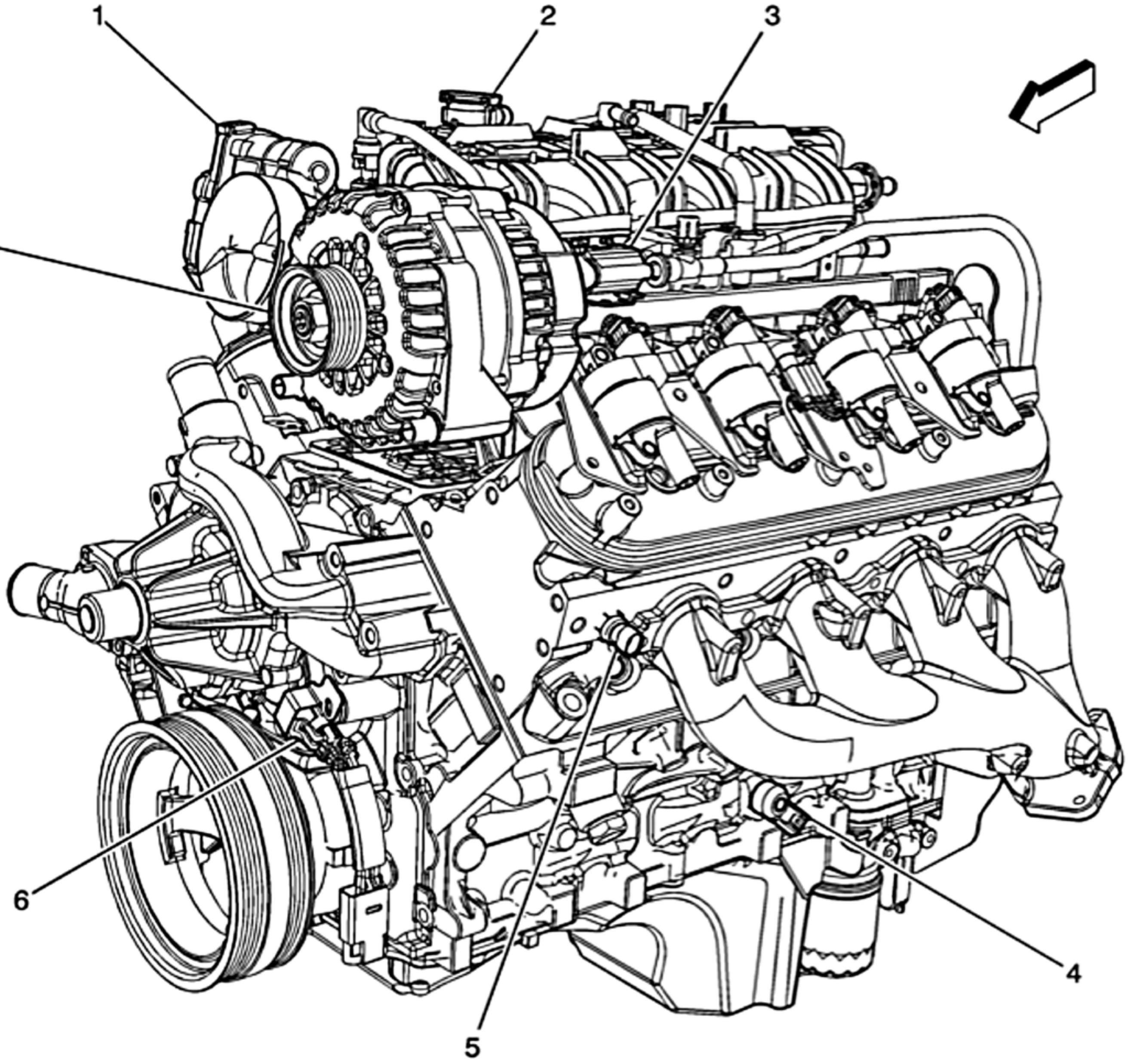
(4) Horn Assembly

(5) Fuse Block - Underhood

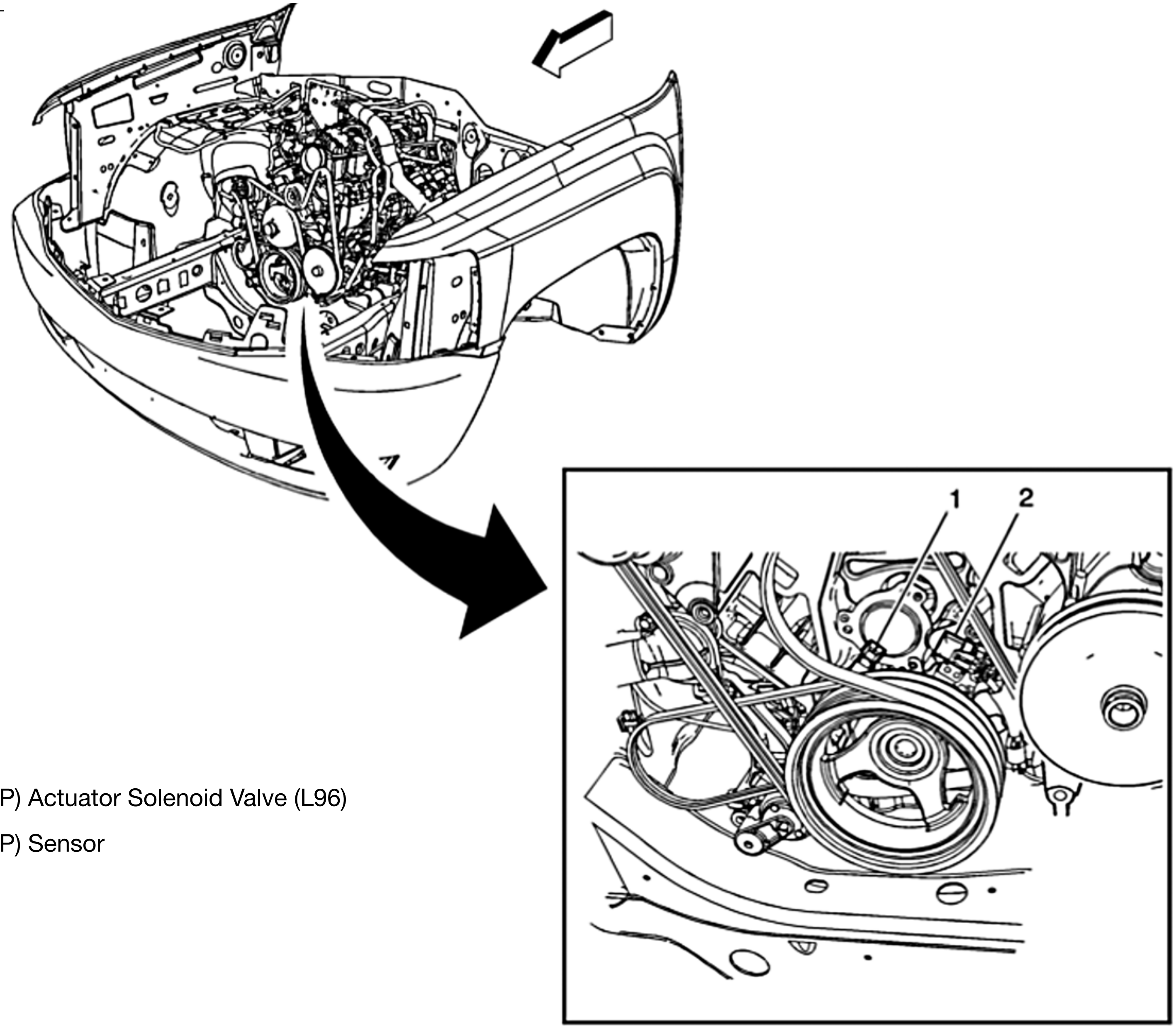


Front of the Engine Components (LC8, LMF, L20, or L96)

- (1) Throttle Body
- (2) Manifold Absolute Pressure (MAP) Sensor
- (3) Evaporative Emission (EVAP) Canister Purge Solenoid Valve
- (4) Knock Sensor (KS) 1
- (5) Engine Coolant Temperature (ECT) Sensor
- (6) Camshaft Position (CMP) Sensor
- (7) Generator



Left Front Side of the Engine Components (LC8, LMF, L20, or L96)



(1) Camshaft Position (CMP) Actuator Solenoid Valve (L96)

(2) Camshaft Position (CMP) Sensor

Left Front of Engine Components (LGH)

(1) Intake Air Valve

(2) Intake Air Heater (IAH)

(3) A/C Compressor Clutch

(4) Exhaust Gas Recirculation (EGR) Valve

(5) Turbocharger Vane Position Sensor

(6) Charge Air Cooler Inlet Temperature Sensor

(7) Exhaust Gas Recirculation (EGR) Temperature Sensor 1

(8) Fuel Filter Pressure Switch

(9) Nitrogen Oxides Sensor 1

(10) Fuel Temperature Sensor 2

(11) Fuel Rail Pressure (FRP) Sensor

(12) Glow Plug Control Module (GPCM)

(13) Fuel Injector 8

(14) Fuel Injector 6

(15) Glow Plug 8

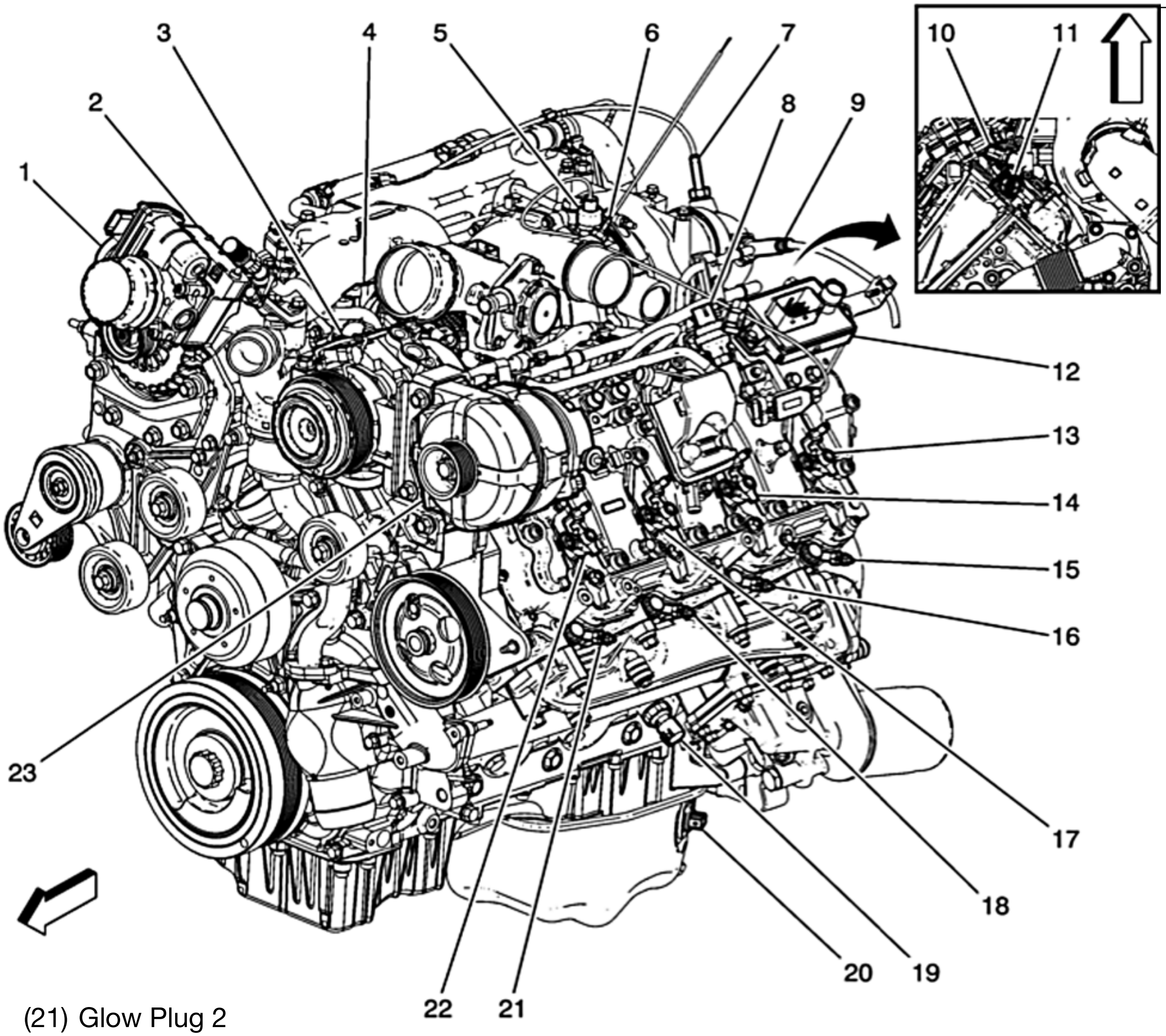
(16) Glow Plug 6

(17) Fuel Injector 4

(18) Glow Plug 4

(19) Engine Oil Pressure (EOP) Sensor

(20) Engine Oil Level (EOL) Switch



(21) Glow Plug 2

(22) Fuel Injector 2

(23) Generator

Right Side of the Engine Components (LC8, LMF, L20, or L96)

(1) Ignition Coil 8

(2) Ignition Coil 6

(3) Ignition Coil 4

(4) Manifold Absolute Pressure (MAP) Sensor

(5) Throttle Body

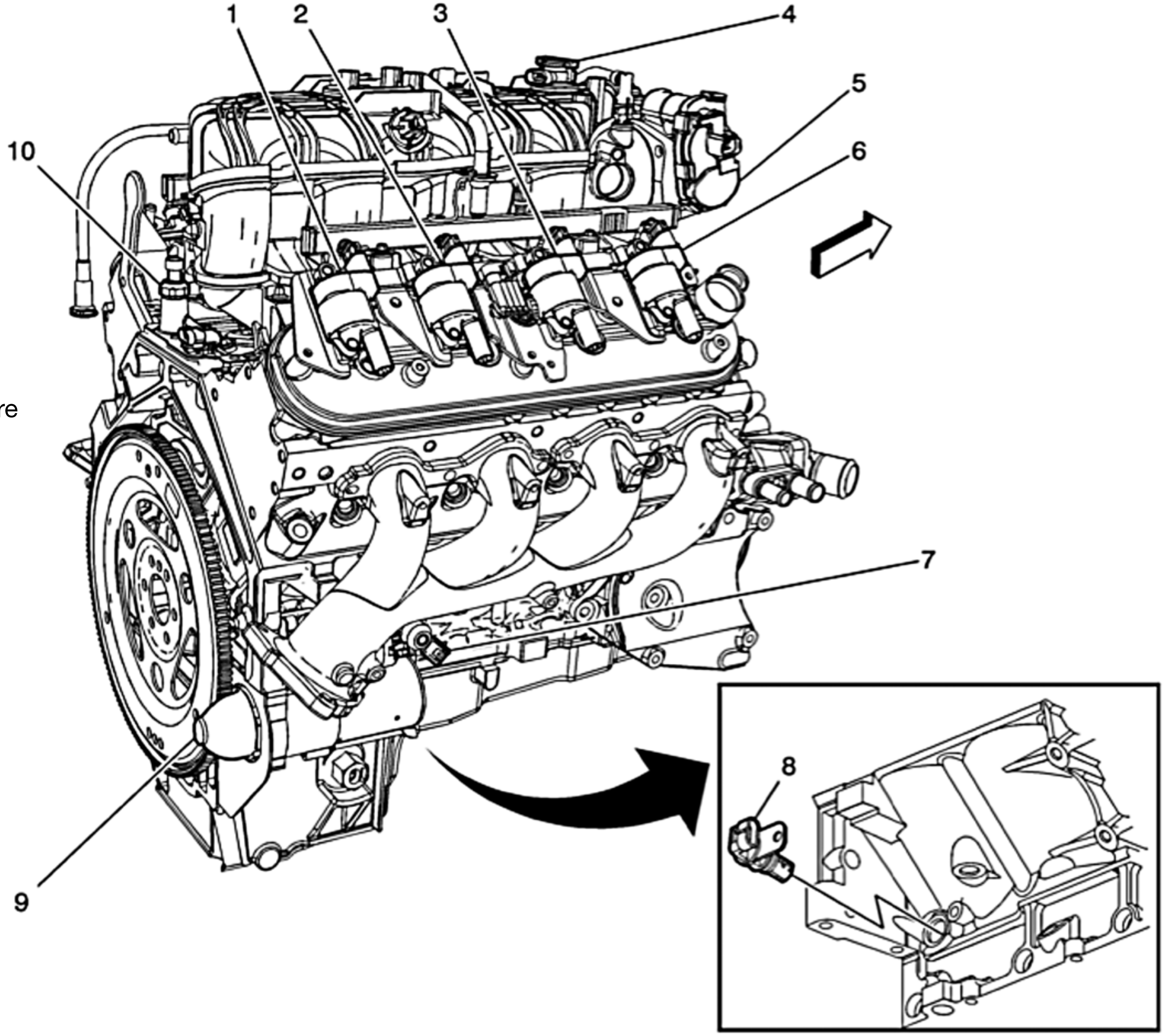
(6) Ignition Coil 2

(7) Knock Sensor (KS) 2

(8) Crankshaft Position (CKP) Sensor

(9) Starter

(10) Engine Oil Pressure (EOP) Sensor

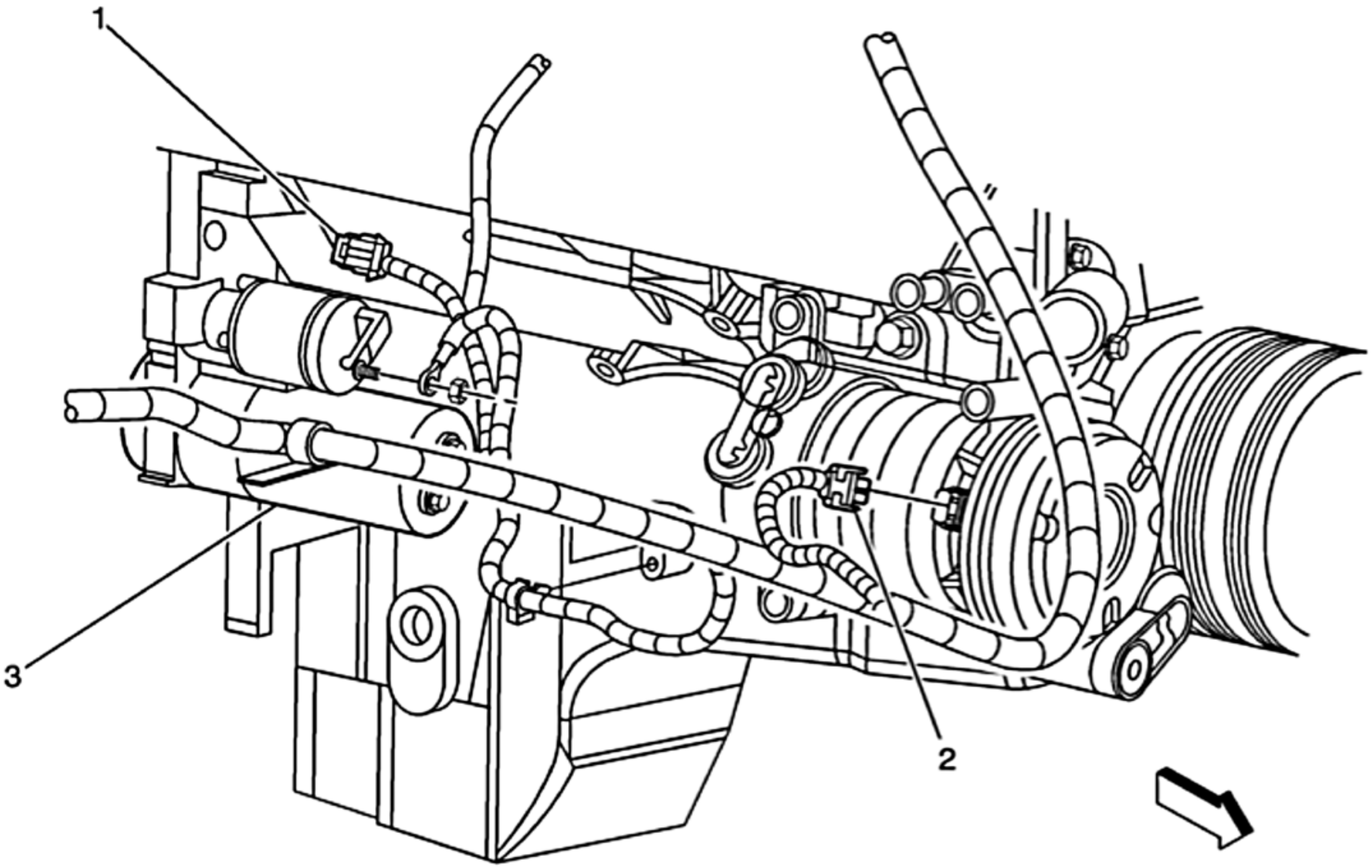


Right Side of the Engine (LC8, LMF, L20, or L96)

(1) Crankshaft Position (CKP) Sensor Connector

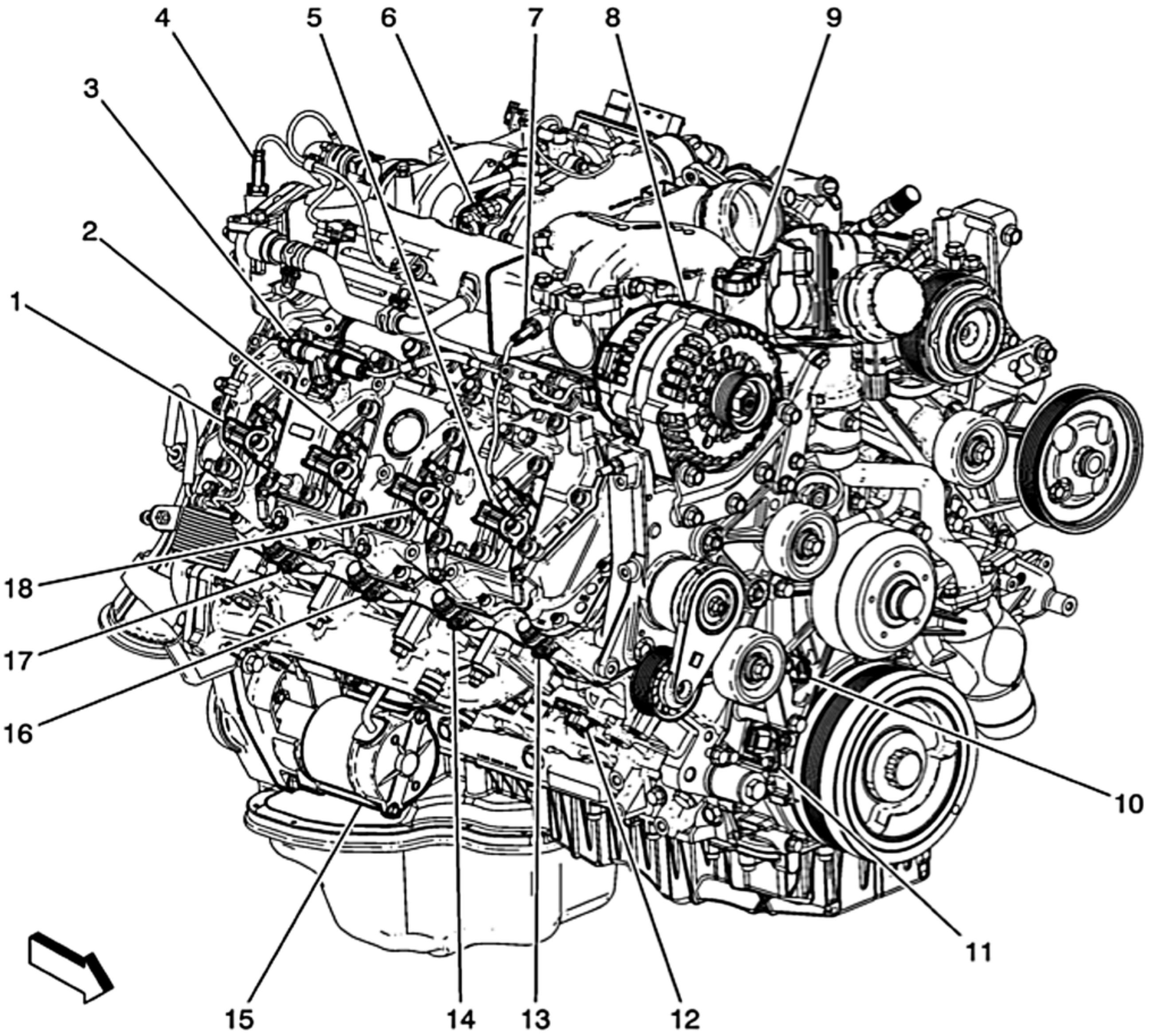
(2) A/C Compressor Clutch Connector (C60)

(3) Starter Motor



Right Front of Engine Components (LGH)

(1) Fuel Injector 7
(2) Fuel Injector 5
(3) Exhaust Aftertreatment Fuel Injector
(4) Exhaust Temperature Sensor 1
(5) Fuel Injector 1
(6) Turbocharger Vane Position Control Solenoid Valve
(7) Exhaust Gas Recirculation (EGR) Temperature Sensor 2
(8) Generator
(9) Manifold Absolute Pressure (MAP) Sensor
(10) Camshaft Position (CMP) Sensor
(11) Crankshaft Position (CKP) Sensor
(12) Engine Block Heater
(13) Glow Plug 1
(14) Glow Plug 3
(15) Starter Motor
(16) Glow Plug 5
(17) Glow Plug 7
(18) Fuel Injector 3



Upper Left Side of the Engine (LC8, LMF, L20, or L96)

(1) Fuel Injector 1 Connector

(2) Fuel Injector 3 Connector

(3) Fuel Injector 5 Connector

(4) J101

(5) J102

(6) Fuel Injector 7 Connector

(7) Ignition Coil 7 Connector

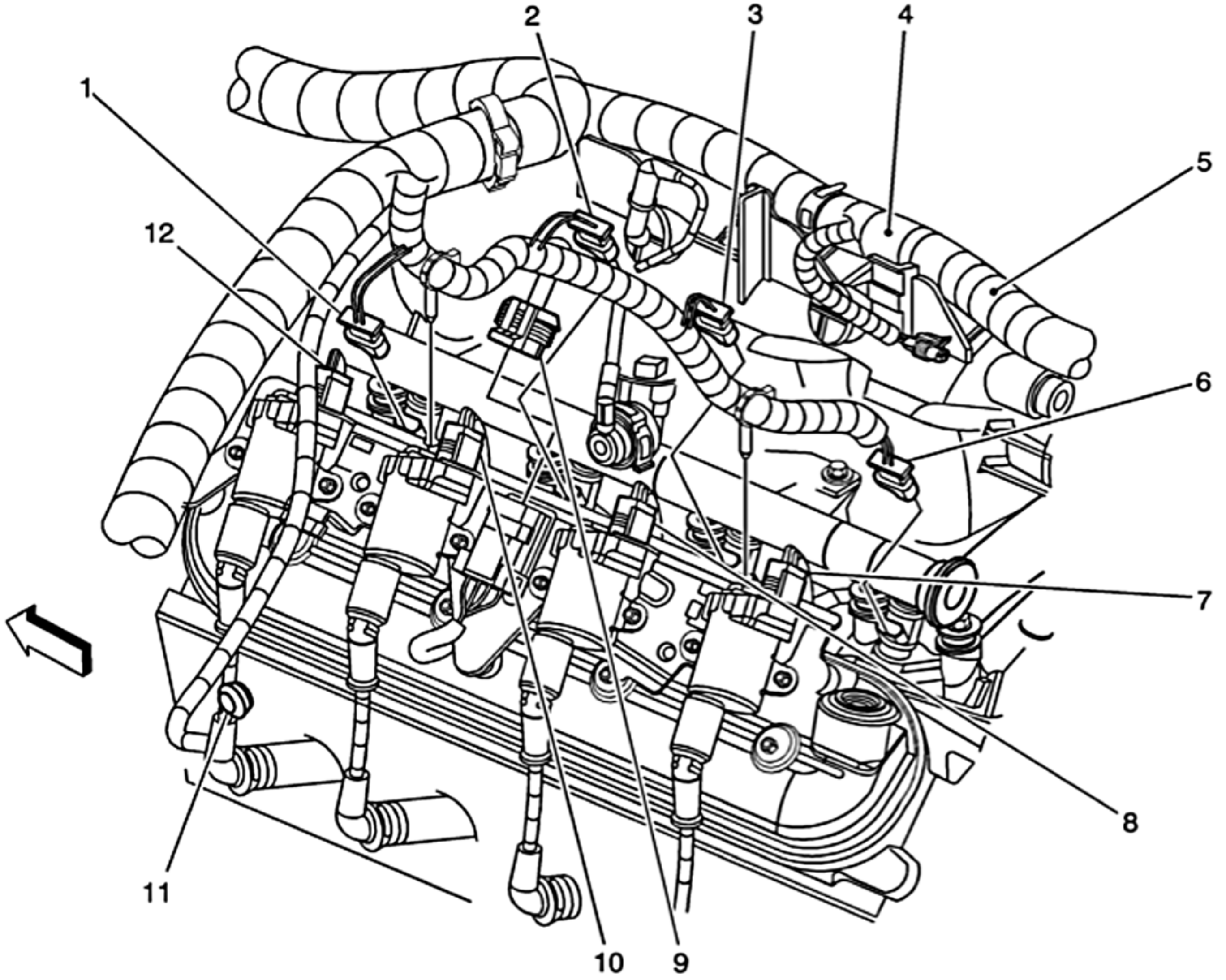
(8) Ignition Coil 5 Connector

(9) X126

(10) Ignition Coil 3 Connector

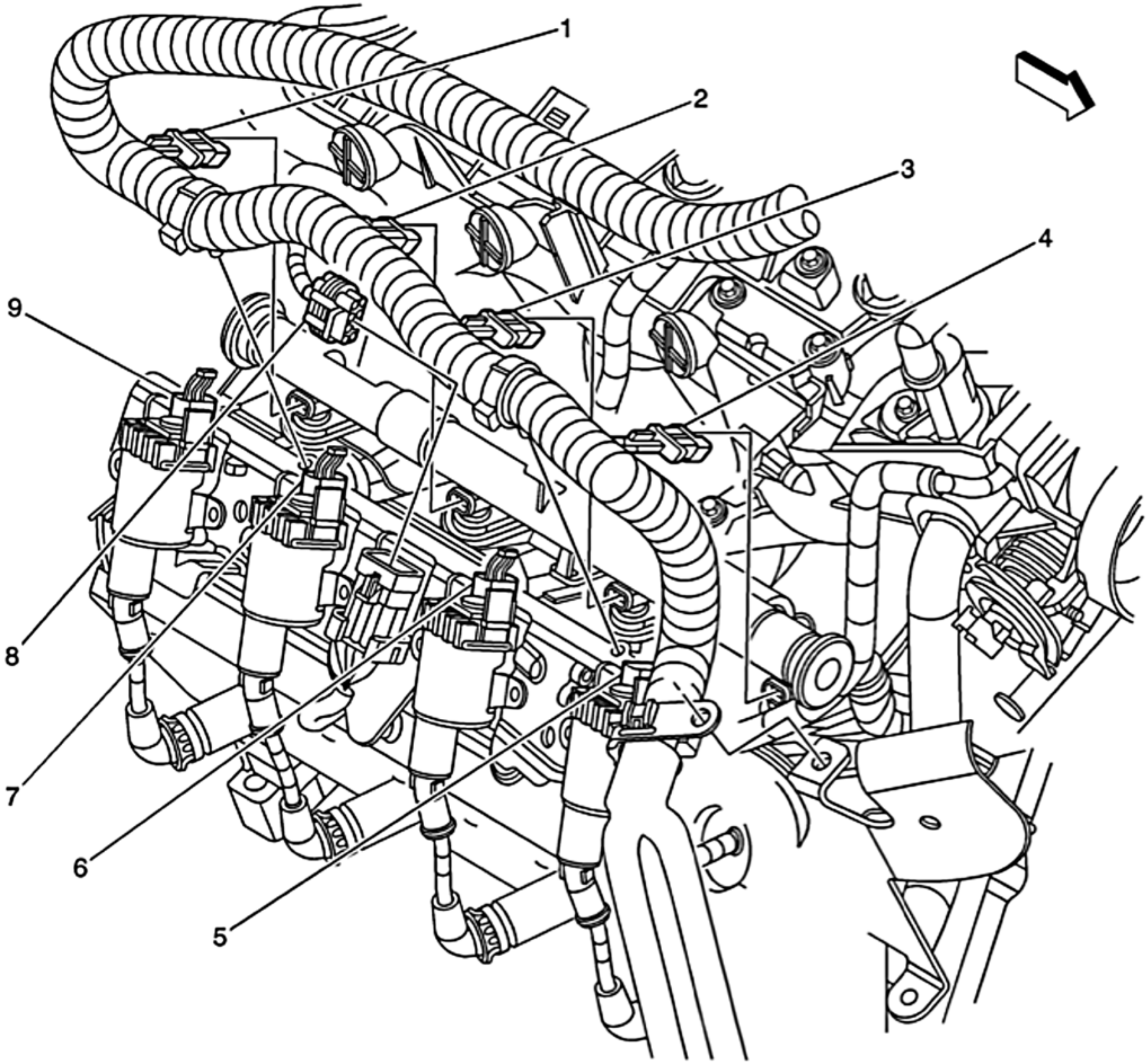
(11) Engine Coolant Temperature (ECT) Sensor Connector

(12) Ignition Coil 1 Connector

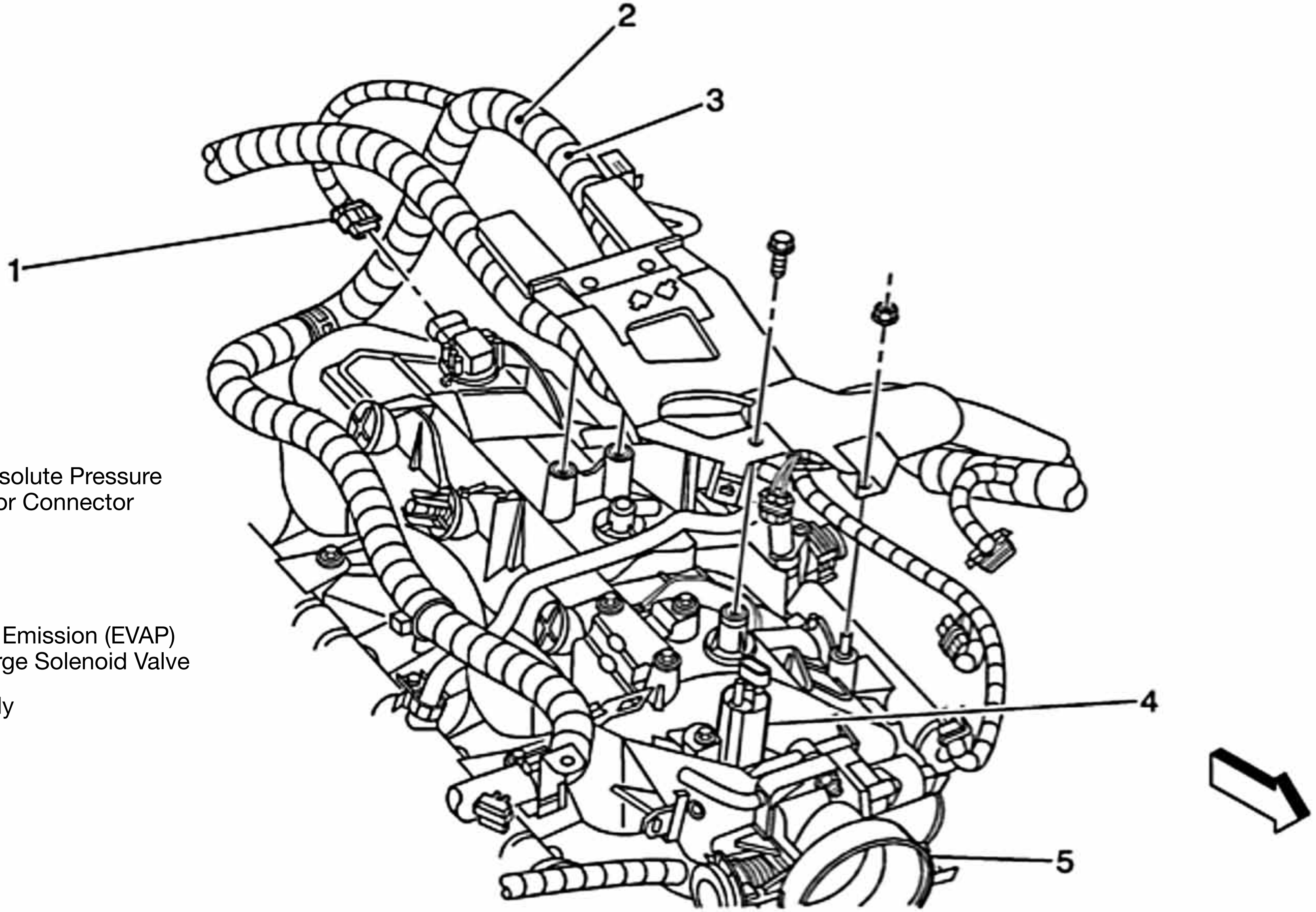


Upper Right Side of the Engine (LC8, LMF, L20, or L96)

(1) Fuel Injector 8 Connector
(2) Fuel Injector 6 Connector
(3) Fuel Injector 4 Connector
(4) Fuel Injector 2 Connector
(5) Ignition Coil 2 Connector
(6) Ignition Coil 4 Connector
(7) Ignition Coil 6 Connector
(8) X127
(9) Ignition Coil 8 Connector



Top of the Engine (LC8, LMF, L20, or L96)



(1) Manifold Absolute Pressure (MAP) Sensor Connector
(2) J102
(3) J101
(4) Evaporative Emission (EVAP) Canister Purge Solenoid Valve
(5) Throttle Body

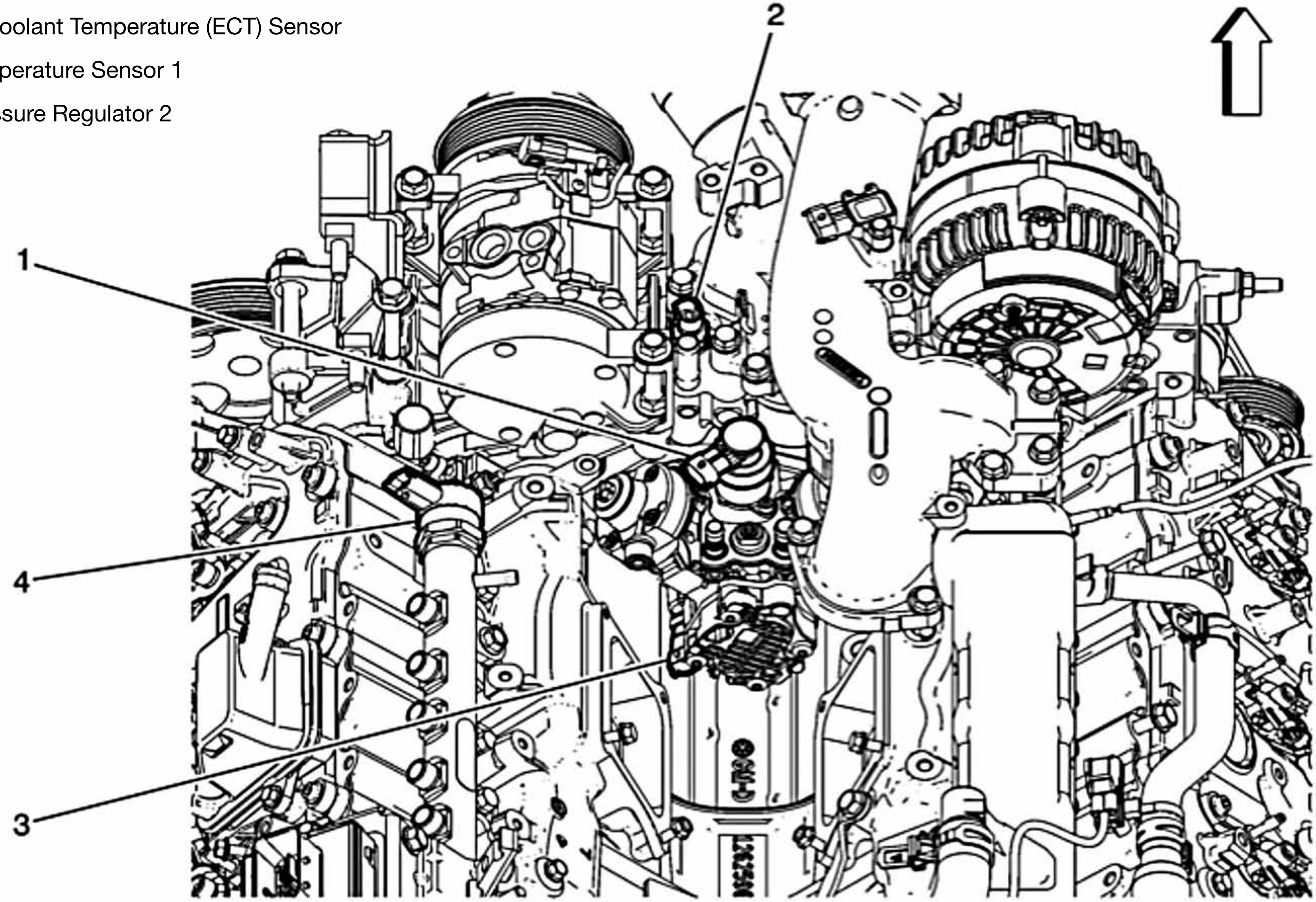
Top of the Engine Components (LGH)

(1) Fuel Pressure Regulator 1

(2) Engine Coolant Temperature (ECT) Sensor

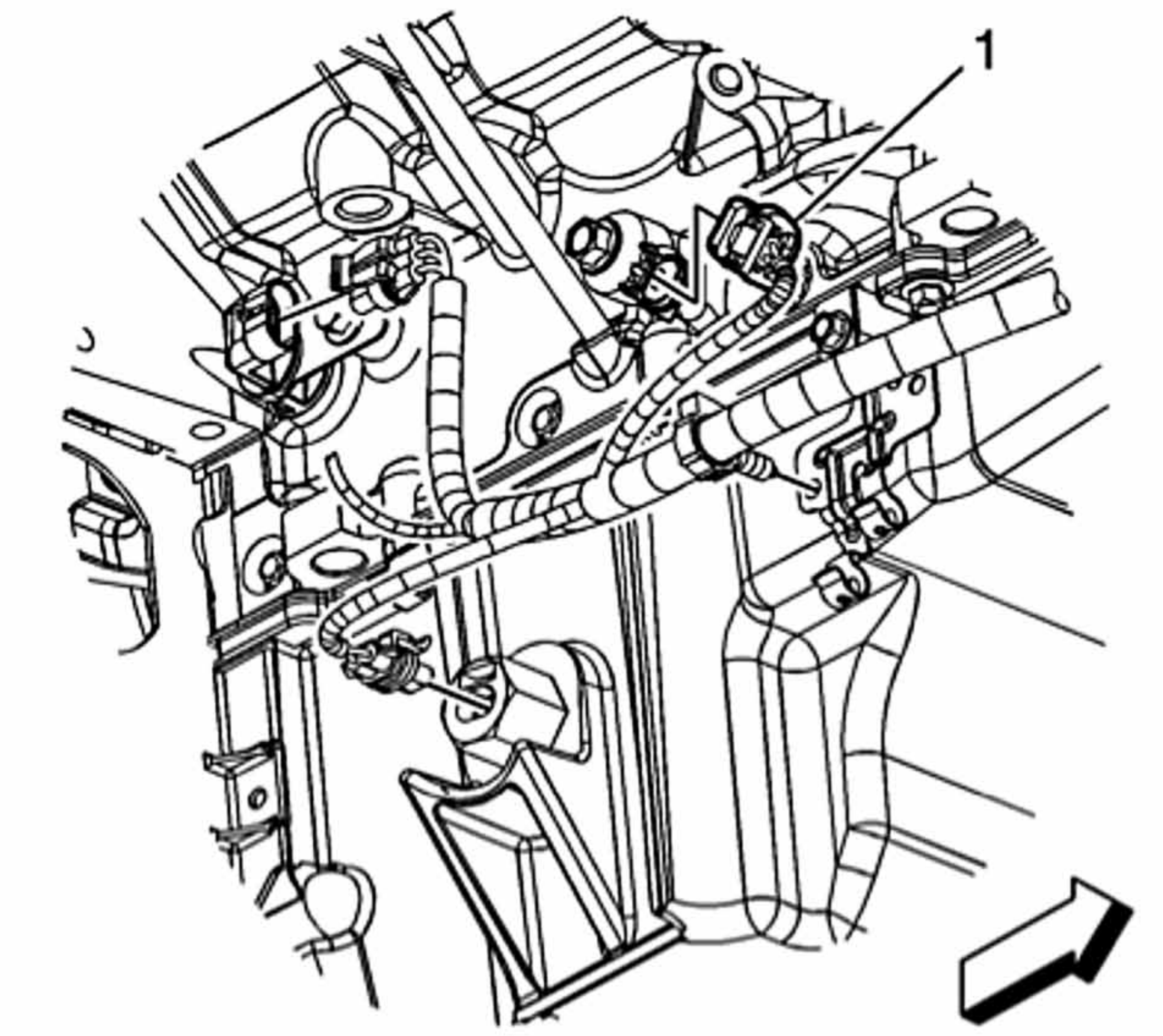
(3) Fuel Temperature Sensor 1

(4) Fuel Pressure Regulator 2



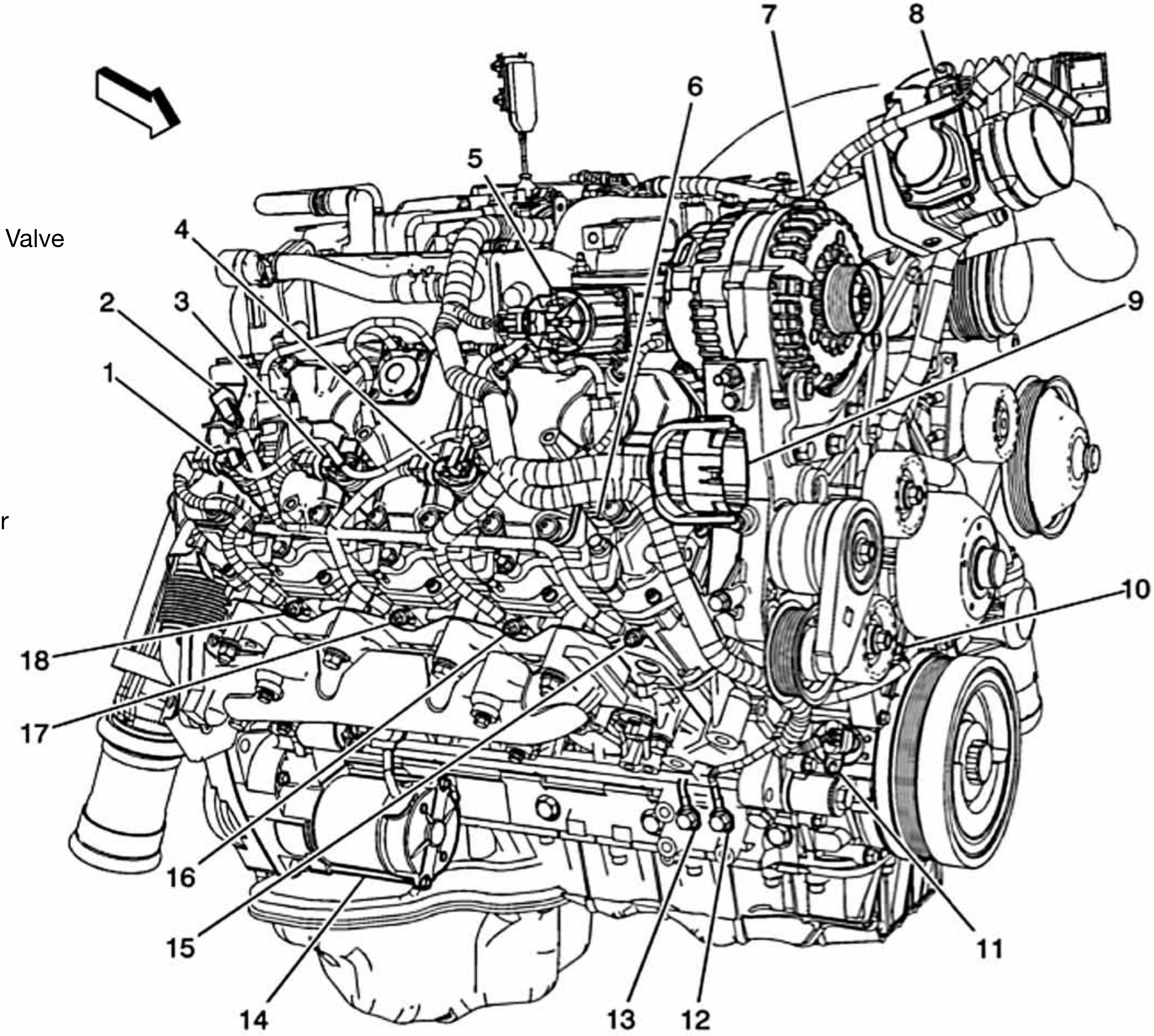
Lower Right of Engine (LC8, LMF, L20, or L96)

(1) Knock Sensor (KS) 2



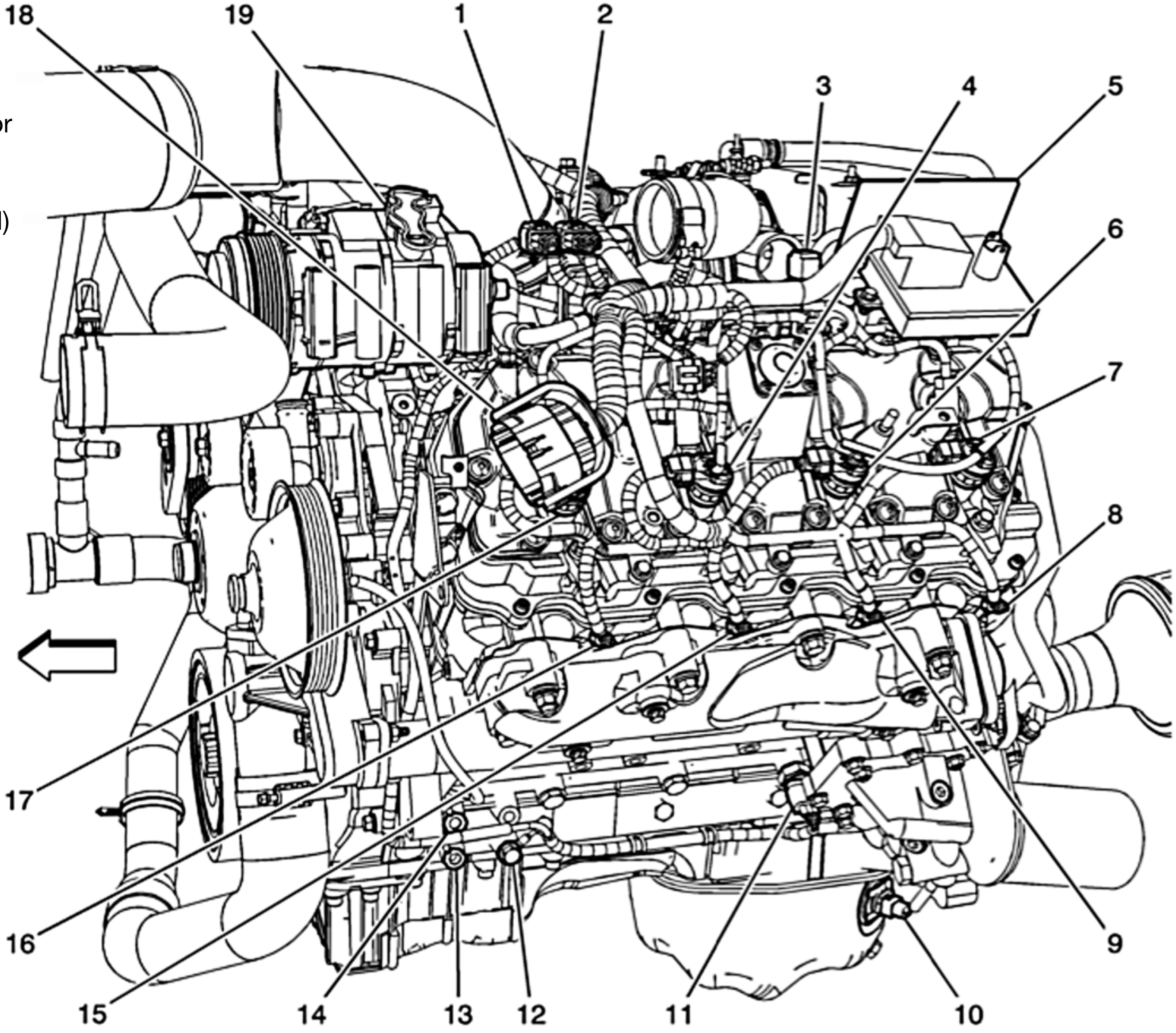
Right Side of the Engine (LMM)

(1) Fuel Injector 7
(2) X112
(3) Fuel Injector 5
(4) Fuel Injector 3
(5) Exhaust Gas Recirculation (EGR) Valve
(6) Fuel Injector 1
(7) Generator
(8) Intake Air Valve
(9) X108
(10) Camshaft Position (CMP) Sensor
(11) Crankshaft Position (CKP) Sensor
(12) G108
(13) G104
(14) Starter Motor
(15) Glow Plug 1
(16) Glow Plug 3
(17) Glow Plug 5
(18) Glow Plug 7

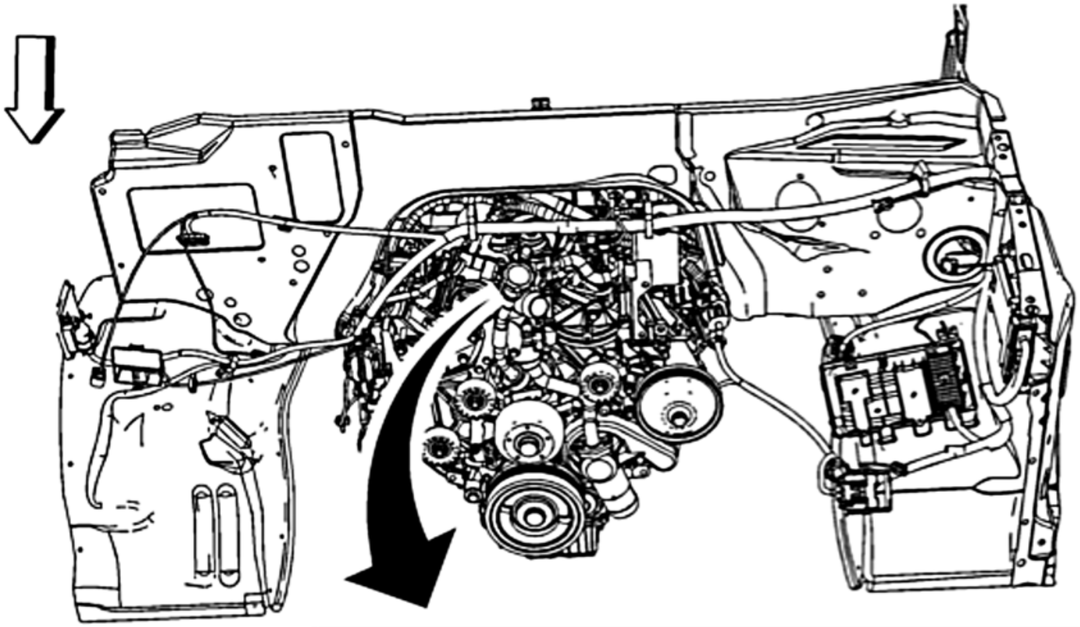


Left Side of the Engine (LMM)

(1) X110
(2) X111
(3) Intake Air Temperature (IAT) Sensor
(4) Fuel Injector 4
(5) Glow Plug Control Module (GPCM)
(6) Fuel Injector 6
(7) Fuel Injector 8
(8) Glow Plug 8
(9) Glow Plug 6
(10) Engine Oil Level (EOL) Switch
(11) Engine Oil Pressure (EOP) Sensor
(12) G107
(13) G102
(14) G103
(15) Glow Plug 4
(16) Glow Plug 2
(17) Fuel Injector 2
(18) X101
(19) A/C Compressor
(18) Glow Plug 7



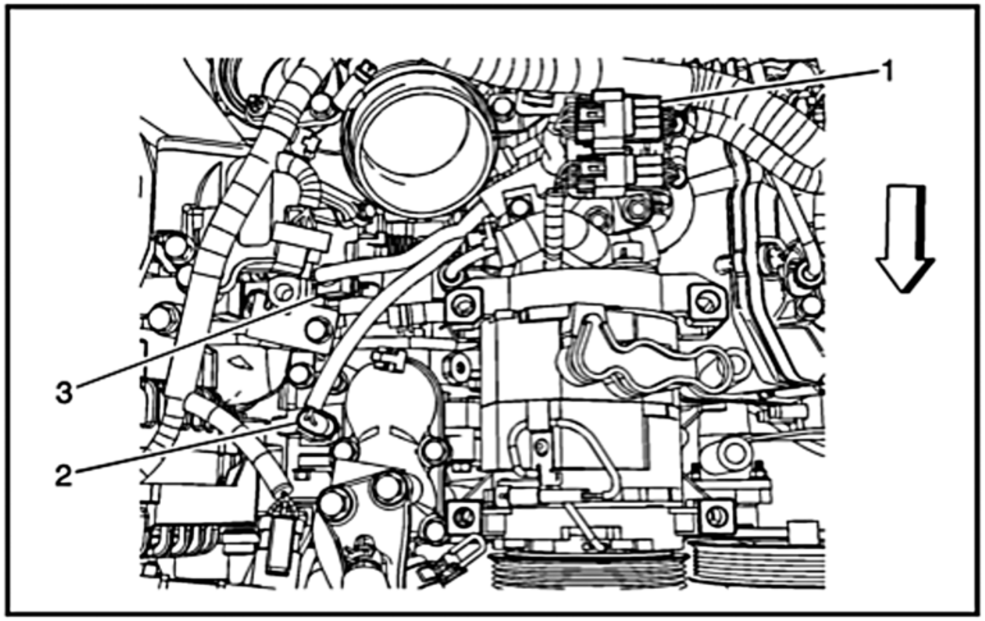
Top of Engine (LMM)



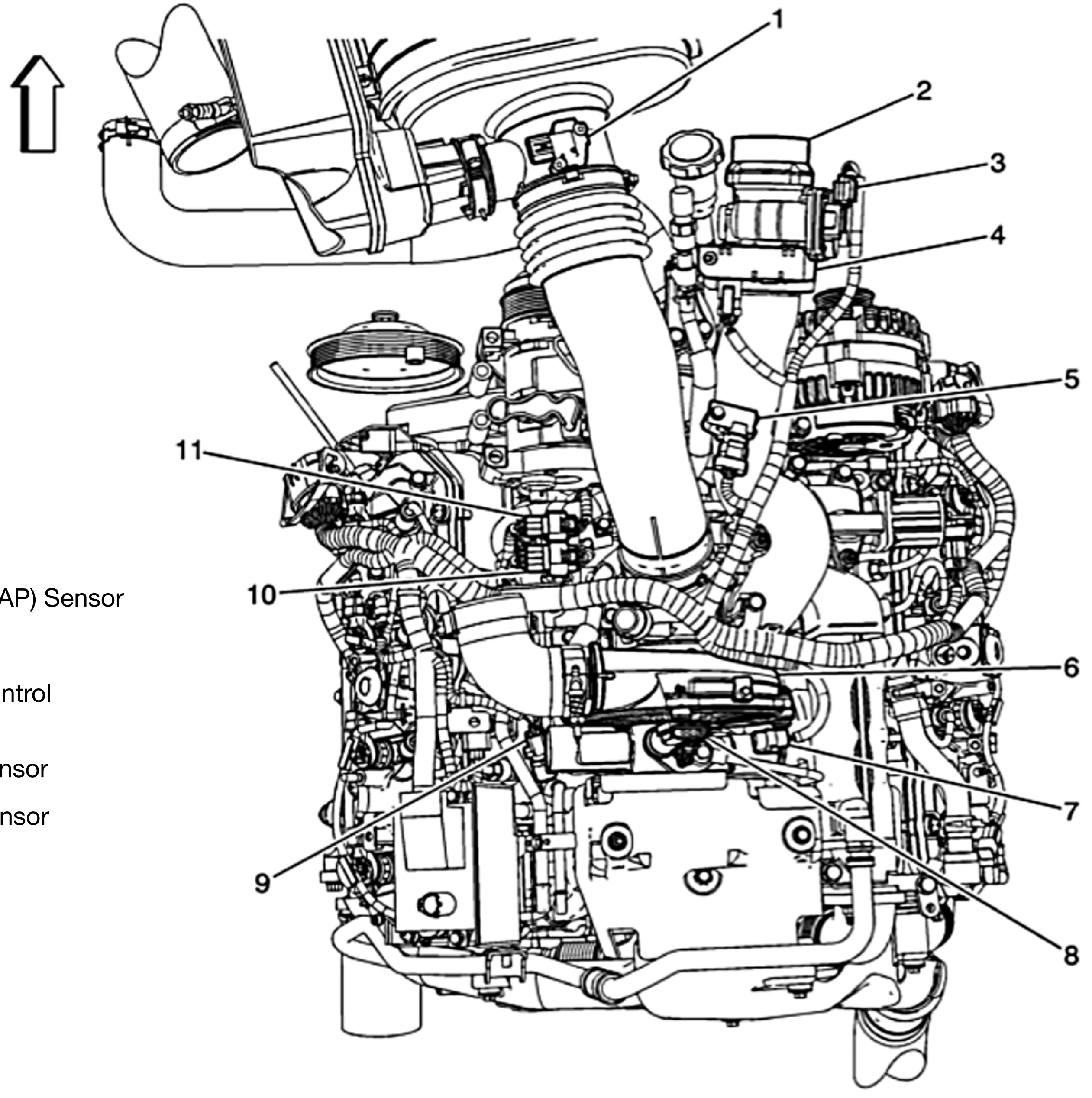
(1) X111

(2) Engine Coolant Temperature (ECT) Sensor

(3) Fuel Pressure Regulator



Upper Engine (LMM or LGH)

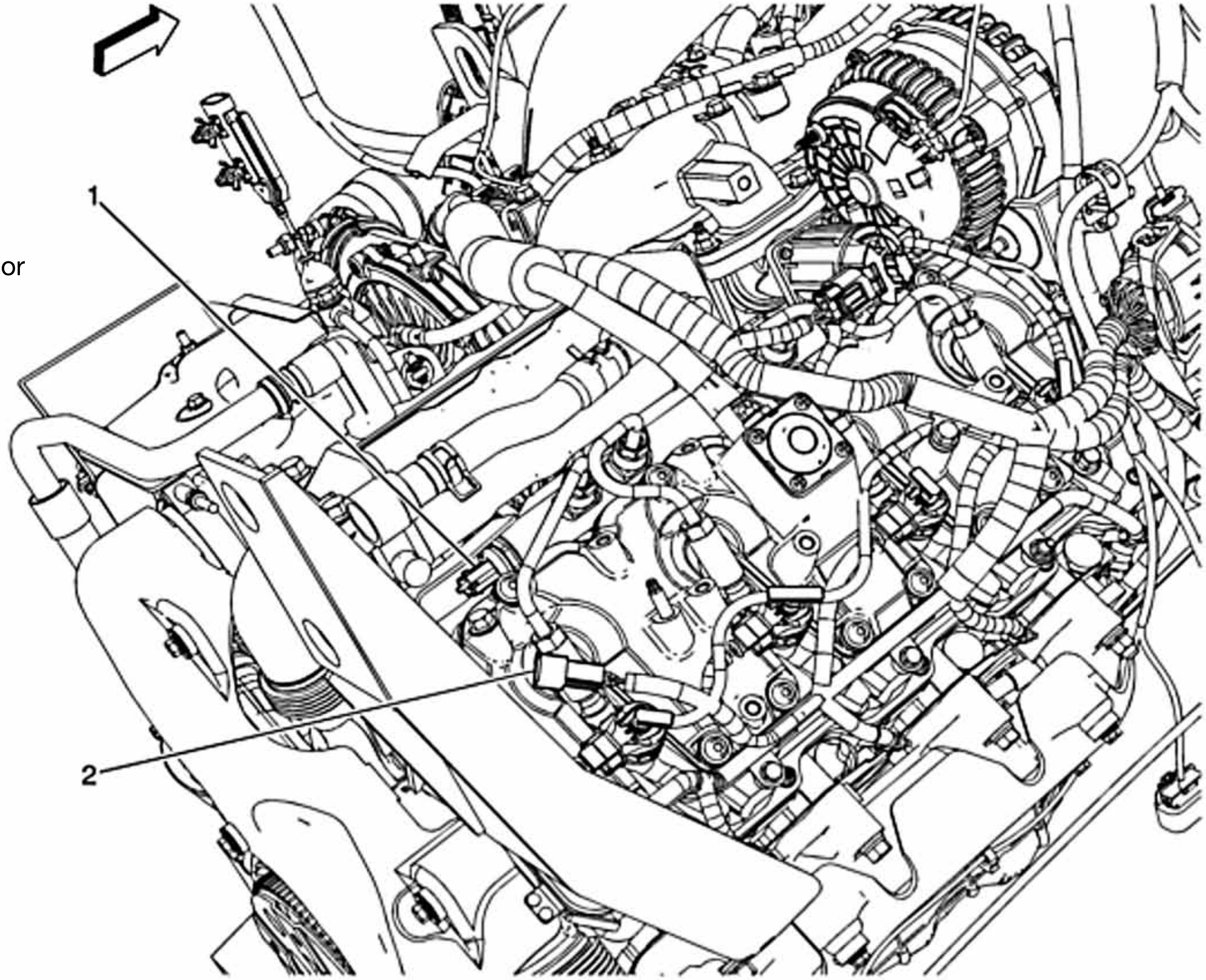


(1) Mass Air Flow (MAF)/Intake Air Temperature (IAT) Sensor
(2) Throttle Body
(3) Intake Air Valve
(4) Intake Air Heater (IAH)
(5) Manifold Absolute Pressure (MAP) Sensor
(6) Turbocharger
(7) Turbocharger Vane Position Control Solenoid Valve
(8) Turbocharger Vane Position Sensor
(9) Fuel Rail Temperature (FRT) Sensor
(10) X111
(11) X110

Top Rear of Engine (LMM or LGH)

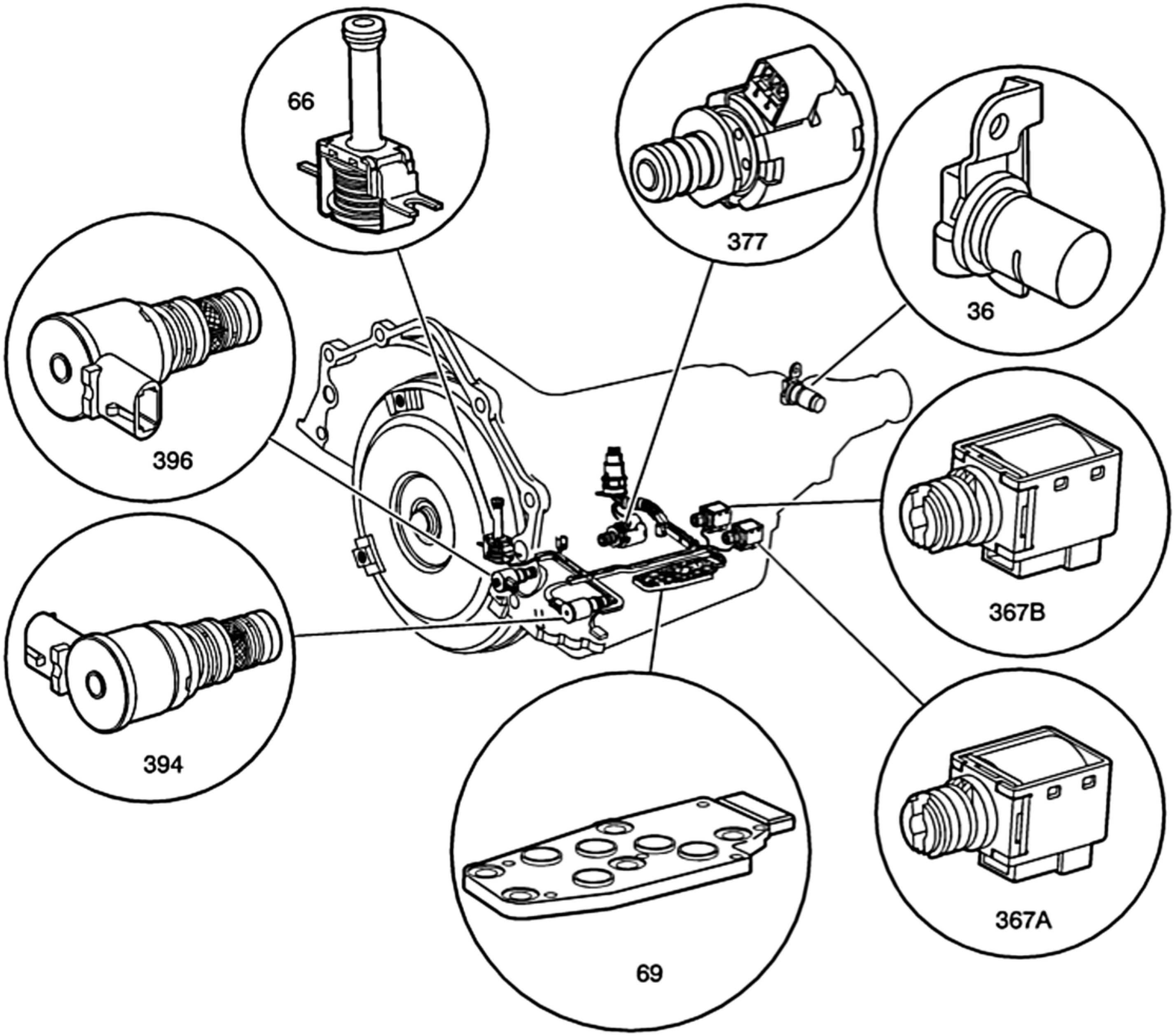
(1) Fuel Rail Pressure (FRP) Sensor

(2) X112

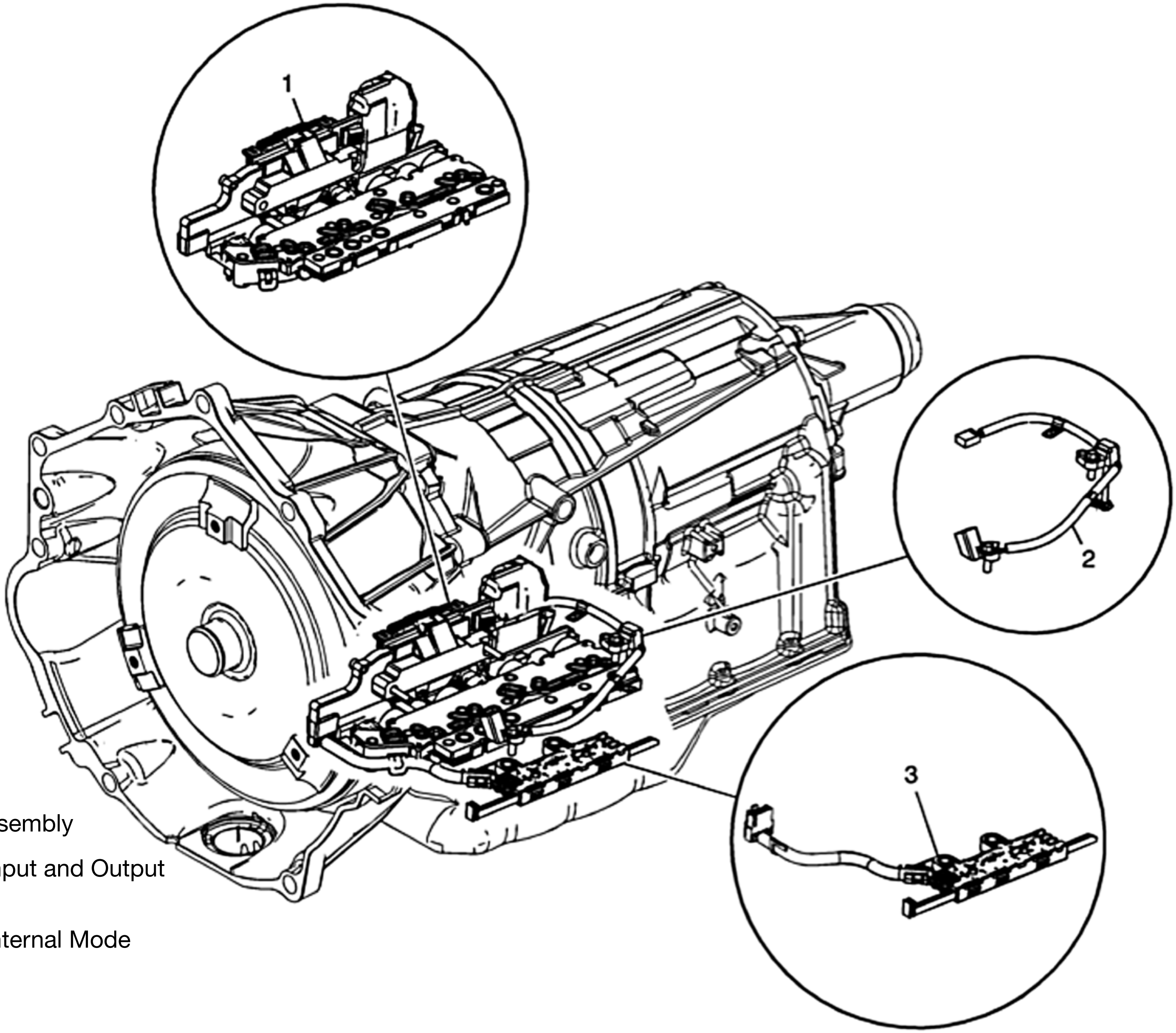


Automatic Transmission Internal Electronic Components (M30)

(36)	Automatic Transmission Output Shaft Speed (OSS) Sensor
(66)	Torque Converter Clutch (TCC) Solenoid Valve
(69)	Automatic Transmission Fluid Pressure (TFP) Manual Valve Position Switch
(367a)	1-2 Shift Solenoid (SS) Valve
(367b)	2-3 Shift Solenoid (SS) Valve
(377)	Pressure Control (PC) Solenoid Valve
(394)	3-2 Shift Solenoid (SS) Valve
(396)	Torque Converter Clutch (TCC) Pulse Width Modulation (PWM) Solenoid Valve



Automatic Transmission Internal Electronic Components (MYD)



(1) Control Solenoid Valve Assembly

(2) Automatic Transmission Input and Output Speed Sensors Assembly

(3) Automatic Transmission Internal Mode Switch (IMS)